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Volume 18 November 1949 Number 11

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This magazine is published to promote sound thought concerning industrial medicine and the surgery of trauma. To that end it will contain articles, news items, reports, digests, and other presentations, together with editors' comments. The editorial policy is to encourage frank discussion. On this basis contributions are invited. The editors will exercise care in checking on the accuracy of data printed but in all other respects articles and opinions of which expression is allowed are the opinions of their authors—the editors reserving in all cases the right to comment on the same in the current or any subsequent issues as they may be inclined.

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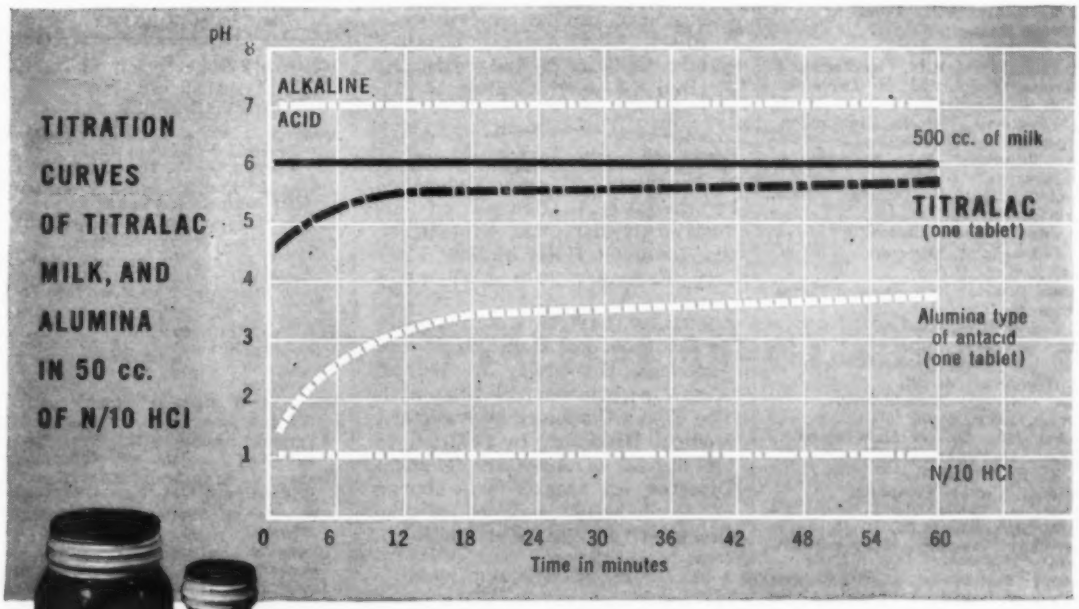

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1. Rossett, N. E., and Flexner, J.: Ann. Int. Med. 18: 193 (1944). 2. Freezer, C. R. E.; Gibson, C. S., and Matthews, E.: Guy's Hosp. Reports 78: 191 (1928). 3. Aaron, A. H.; Lipp, W. F., and Milch, E.: J. A. M. A. 139: 514 (Feb. 19) 1949. 4. Kirsner, J. B., and Palmer, W. L.: Illinois M. J. 94: 357 (Dec.) 1948. 5. Kimball, S.: in Practice of Medicine (Tice). Hagerstown, Md., W. F. Prior Company, Inc., 1948; p. 210. 6. Special Article: M. Times 76: 10 (Jan.) 1948.

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INDUSTRIAL HYGIENE FOUNDATION'S 14th Annual Meeting will be held at Mellon Institute, Pittsburgh, on November 16, 17 and 18, 1949.

THE TENTH Annual Congress on Industrial Health, sponsored by the A.M.A. Council on Industrial Health, will be held at the Roosevelt Hotel in New York City, February 20 and 21, 1950.

CURTIS H. BAYLOR, M.D., formerly Professor of Medicine at the American University in Beirut, is now associated full time with The Texas Company as Assistant Medical Director. In addition to his duties as Assistant Medical Director, DR. BAYLOR is in charge of the clinical services of the Company at the home office in New York City.

VINCENT R. RAY, M.D., has resigned his position with The Esso Standard Oil Company to take charge of the Medical Department at the Bethlehem Steel Company Shipyards in Brooklyn, effective September 12, 1949.

J. P. GRIFFIN, M.D., a recent member of A.A.I.P. & S., has transferred from E. I. Du Pont de Nemours & Co., Penns Grove, New Jersey, to the company's Experimental Station at Wilmington, Delaware.

THE 1949 Pennsylvania Ambassador Award was presented to MRS. GLADYS NOSS DUNDORE, Executive Secretary of the American Association of Industrial Nurses, in Hazelton, Pennsylvania, on October 21, 1949. MRS. DUNDORE is the first industrial public health nurse to receive recognition from the Commonwealth. She is well known for her articles which have appeared in nursing and industrial health publications.

ADOLPH G. KAMMER, A.B. and M.S., University of Wisconsin, and M.D., University of Pennsylvania, has been appointed Professor and Head of the Department of Occupational Health, School of Public Health, University of Pittsburgh, effective October 1, 1949. DR. KAMMER served his internship at Philadelphia General Hospital after which he practiced medicine in Belleville,

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Wisconsin, 1930-34. He was Medical Examiner for Montreal Mining Company, Montreal, Wisconsin, 1934-36; Medical Director of Inland Steel Company, East Chicago, Indiana, 1936-44; Medical Director of Carbide and Carbon Chemical Company, Oak Ridge, Tennessee, 1944-46; and since 1947 he has been General Medical Director of Carbide and Carbon Chemicals Corporation at South Charleston, West Virginia. He is First Vice-President of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS; Fellow of the American Medical Association; and a member of the AMERICAN INDUSTRIAL HYGIENE ASSOCIATION, the American Public Health Association, the AMERICAN ACADEMY OF OCCUPATIONAL MEDICINE, the Kanawha, West Virginia, Medical Society, and the Medical Committee of the Industrial Hygiene Foundation.

ROGER E. ALLEN, M.D., has been appointed Medical Director of the American Optical Company to succeed the late DR. T. L. STORY. For the past three years DR. ALLEN has been Assistant to the Medical Director. He was born and brought up in Shewsbury, attending the grammar and high schools in that town. Graduated from the University of Massachusetts in 1936 and from Tufts Medical School in 1940, he interned at Hahnemann Hospital in Worcester from 1940 to 1942. He volunteered for the U. S. Army Medical Corps in 1942 and served overseas 37 months with the First Armored Division, rising to the rank of Captain. He received an honorable discharge in January, 1946. DR. ALLEN is a member of the American Medical Association, the Massachusetts Medical Society, and the Military Order of World Wars.

FREDERICK W. SLOBE, M.D., has been elected Assistant Director of the Illinois Blue Cross Plan for Hospital Care. He will serve in the capacity of administrative director of the Medical Department. DR. FRANK P. HAMMOND who has served as Medical Director of the Blue Cross Plan for Hospital Care since 1939 will continue to serve as Medical Adviser and Consultant and will be free to devote his attention to the increasing demands of the fast-growing Blue Shield Medical Service Plan. DR. SLOBE is secretary and member of the Board of Trustees of the Blue Shield

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62nd Annual Meeting, April 4-6, 1950, at the Drake Hotel, Chicago

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1952

V. J. FORNEY, D.D.S.; M.P.H.,
4604 S. Chelsea Lane,
Bethesda, Maryland.

Aero Medical Association of the United States; Secretary: DR. D. S. BRACHMAN, 1016 Dime Bldg., Detroit 24.

American Academy of Occupational Medicine: Secretary, JAMES J. CARLISLE, M.D., 550 Hillcrest, Westfield, N. J.

American Association for the Advancement of Science, 1515 Massachusetts Ave., N.W., Washington 5, D.C.

American Association of Industrial Nurses, 654 Madison Ave., New York 21, N.Y. GLADYS L. DUNDORE, R.N., Executive Secretary.
April 23-29, 1950, Chicago.

American Chemical Society, 1155 Sixteenth St., N.W., Washington 6, D.C. A. H. EMERY, Secretary.

American College of Physicians, 4200 Pine St., Philadelphia 4, Pa. E. R. LOVELAND, Secretary.

American College of Surgeons, 40 East Erie St., Chicago 11, Ill.

Plan of the Chicago Medical Service, chairman of the executive committee of the Chicago Industrial Health Association, a member of the Mayor's advisory committee to the Board of Health, and a member of the Council of the Chicago Medical Society and of the House of Delegates of the Illinois Medical Society. He is Chief of the Department of Traumatic Surgery at St. Anthony Hospital, and is actively engaged in industrial medicine and surgery. He is also Past-President of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, Past-President of the CHICAGO SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY, and Past-President of the CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY; a Fellow of the American College of Surgeons, member of the Institute of Medicine, Diplomate of the National Board of Medical Examiners, member of the Editorial Board of INDUSTRIAL MEDICINE, and chairman of the Medical Advisory Board for the radio program, "It's Your Life." At the 1949 annual convention of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, he was given the Meritorious Award for distinguished service in Industrial Medicine and Surgery. Among his duties as administrative director of the Blue Cross Medical Department, DR. SLOBE will help to handle medical problems and professional relations in connection with servicing the Plan's more than 1,600,000 members. In the first nine months of 1949, over 176,069 Blue Cross members were hospital patients and the Plan provided benefits for them in the amount of $15,-354,963.05.

American Conference of Governmental Industrial Hygienists, U.S. Public Health Service, Washington, D.C. J. J. BLOOMFIELD, Secy-Treas.
April 23-29, 1950, Chicago.

American Industrial Hygiene Association, 4400 Fifth Ave., Pittsburgh 13, Pa. HENRY F. SMYTH, JR., Executive Secy.
April 23-29, 1950, Chicago.

American Medical Association, Council on Industrial Health, 535 North Dearborn St., Chicago 10, Ill. CARL M. PETERSON, M.D, Secretary.

American Public Health Association, 1790 Broadway, New York 19, N. Y. REGINALD M. ATWATER, M.D., Executive Secretary.
November 8-12, 1949; Boston.

Association for the Surgery of Trauma.

Canadian Public Health Association, Vancouver, B.C., Canada.

Council on Industrial Health, American Medical Association; Secretary: CARL M. PETERSON, M.D., 535 N. Dearborn St., Chicago 10.

Industrial Hygiene Foundation of America, 4400 Fifth Ave., Pittsburgh 13, Pa. JOHN F. MCMAHON, Managing Director.
November 16-18; Pittsburgh.

International Association of Industrial Accident Boards & Commissions. MARSHALL DAWSON, U.S. Dept. of Labor, Washington, D.C., Secretary-Treasurer.
September 12-18; New York.

Lead Industries Association, 420 Lexington Ave., New York 17, N.Y. ROBERT L. ZIEGFELD, Secretary-Treasurer.
November 15-16; Chicago.

National Council on Rehabilitation; Secretary-Treasurer: MR. HOLLAND HUDSON, 1790 Broadway, New York 19.

National Metal Congress, Philadelphia.
October 25-28; Philadelphia.

National Rehabilitation Association, 411-7th Ave., Nashville 4, Tenn. LOUIS R. SCHUBERT.

National Safety Council, 20 North Wacker Drive, Chicago 6, Ill. NED H. DEARBORN, President; CARMEN FISH, Secretary.
October 18-22; Chicago.

National Tuberculosis Association, 1790 Broadway, New York 19, N. Y. H. STUART WILLIS, Secretary.

Saranac Laboratory of Edward L. Trudeau Foundation, 7 Church Street, Saranac Lake, N. Y. ARTHUR J. VORWALD, M.D., Director.

minor ailments can mean major production losses

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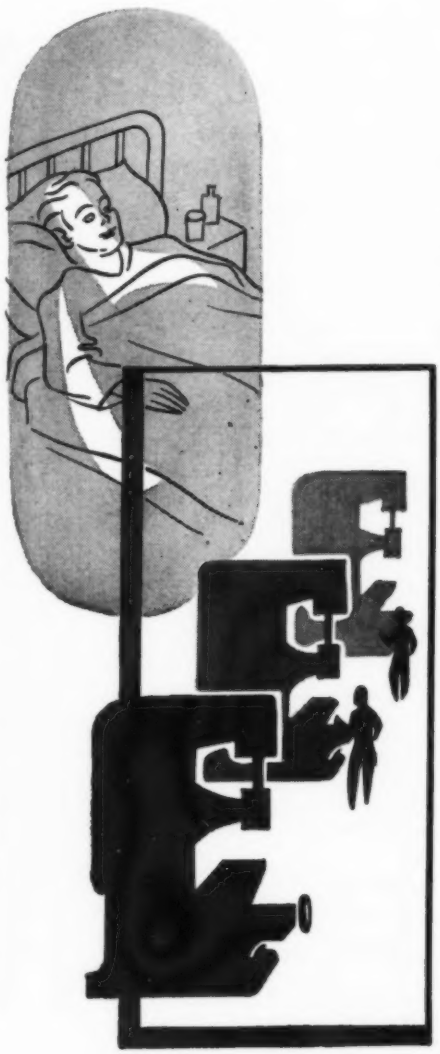

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****Reprints of published papers on request:**

Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154; Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60; Proc. Soc. Exp. Biol. and Med., 1934, 32-241; N. Y. State Journ. Med., Vol. 35, 6-1-25, No. 11, 590-592.

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1. Mayer, L. L.: Arch. Ophth. 39:232, 1948.
2. Thygeson, P., in discussion on Mayer, L. L.: Arch. Ophth. 39:232, 1948.

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The complexities and fast pace of modern living demand—for safety's sake—that mental acuity be sustained in both adults and children, at highest pitch throughout the day, including such times as the pre-noon hour when alertness may wane. In this light, recent studies* at a prominent medical college proving that adequate breakfasts are required for sustained morning mental acuity extending through the pre-noon hour assume especial importance.

A Good Breakfast.. Improved Mental Acuity

In this study, conducted jointly by the departments of physiology and nutrition of a prominent medical college, a direct relationship between late-morning mental acuity and breakfast habits was definitely established. The experiments were planned to learn whether eating breakfast, and eating no breakfast or taking coffee only, influenced the subjects' mental acuity during the pre-noon hour.

Six young women graduate students were used as subjects and mental acuity was determined by measurement of simple and choice reaction times to light stimuli. These experiments definitely showed:

(1) That the *omission* of breakfast increases reaction time, hence acts detrimentally;

(2) That when breakfast is eaten, reaction time is reduced—hence favorably influenced.

In other words, eating breakfast better prepares one for the demands of living and from a practical standpoint, serves as a safety precaution against potential accidents due to breakfast skimping or skipping.

For Sound Nutrition Planning

As the foundation for an adequate breakfast, nutrition and health authorities recommend a basic breakfast pattern of fruit or juice, cereal, milk, bread and butter. The cereal serving of this pattern—cereal and milk—contributes important amounts of biologically complete protein, B vitamins and essential minerals. It is easily digestible, offers many varieties of form and taste, and is truly economical.

*Reprint of the study will be sent upon request.

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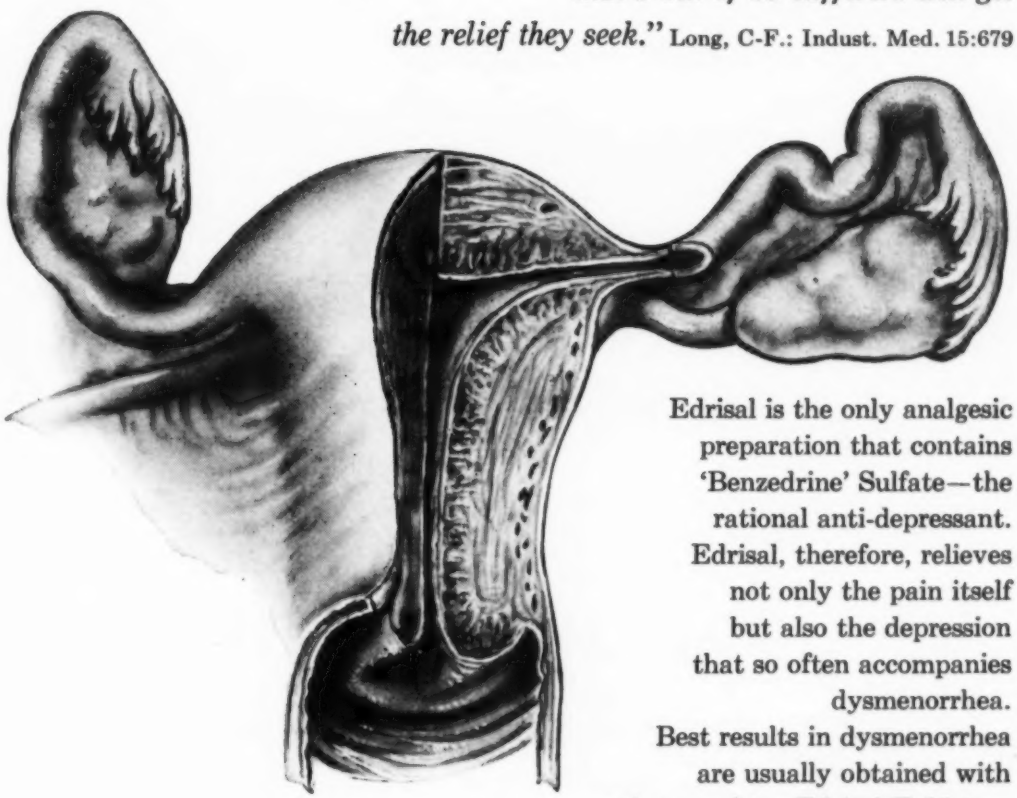

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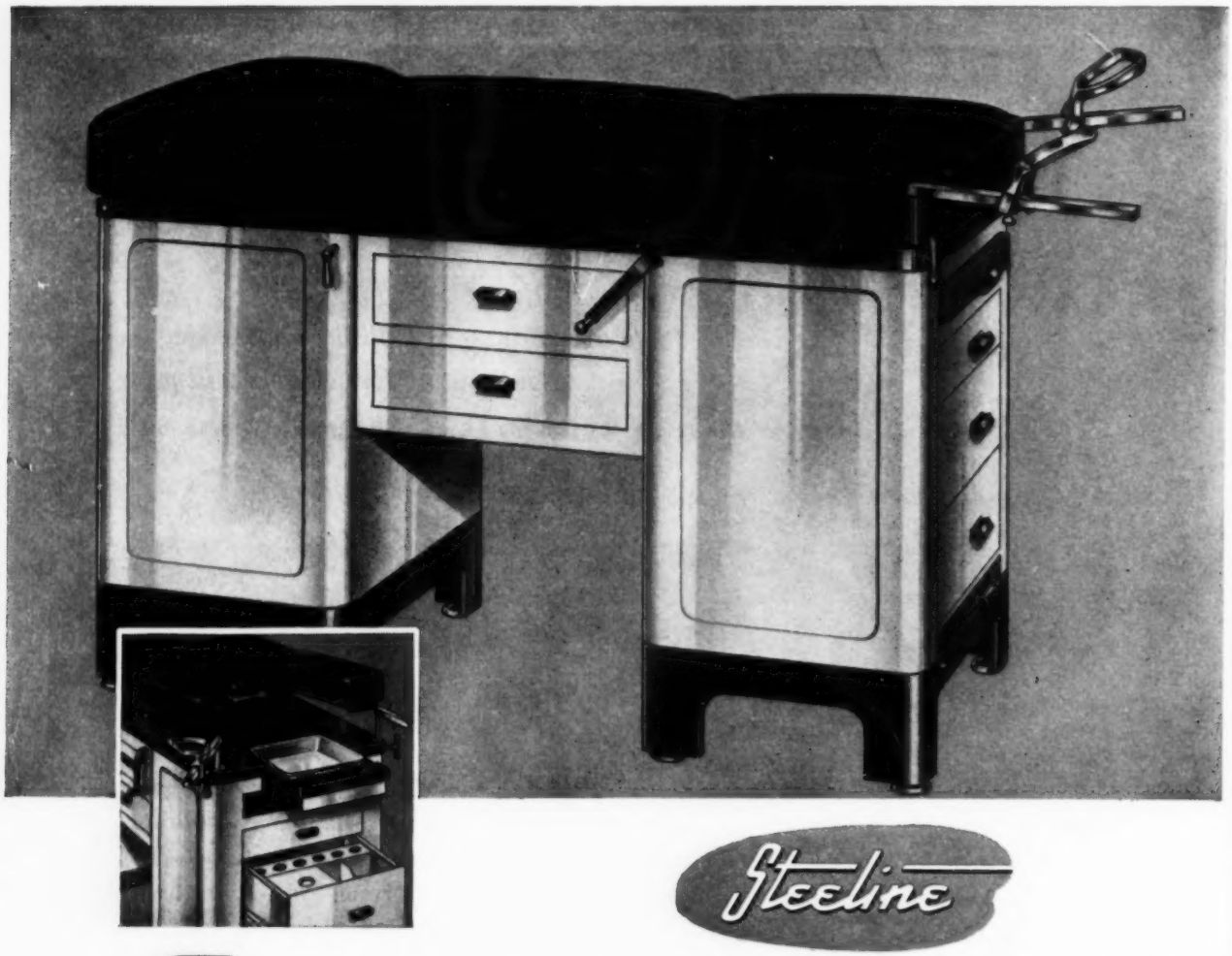

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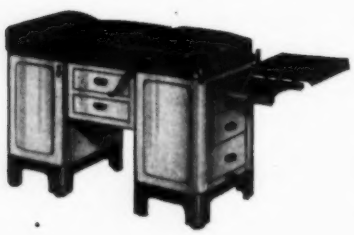

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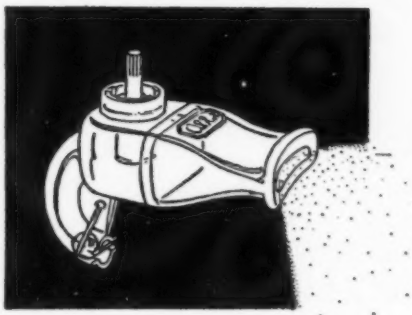

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1. Krasno, L., Karp, M., and Rhoads, P. S. (1948), The Inhalation of Penicillin Dust, J. Amer. Med. Assn., 138:344, October 2.

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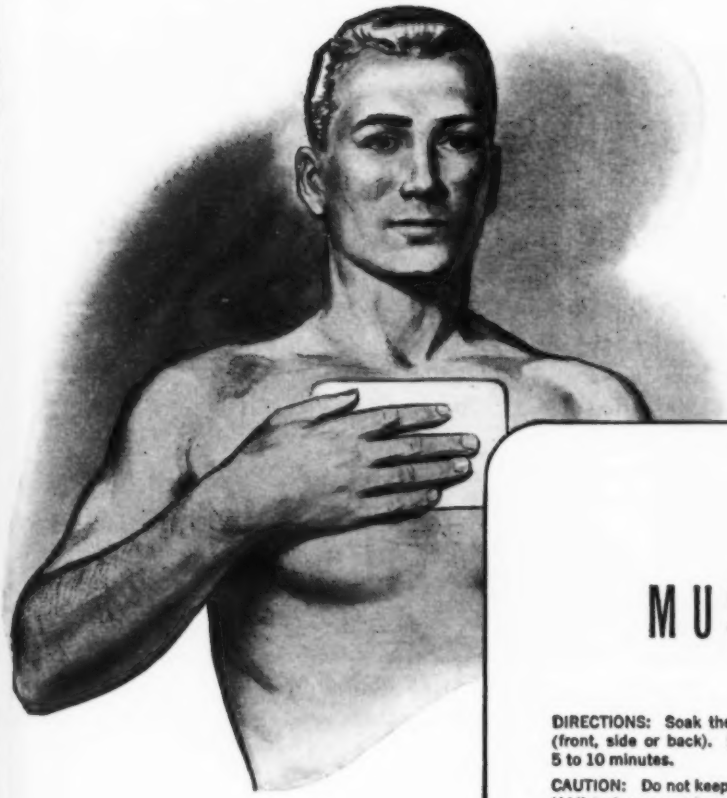

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DIRECTIONS: Soak the plaster in lukewarm water (1 to 2 minutes) and apply to chest (front, side or back). Remove plaster when skin is thoroughly reddened, usually within 5 to 10 minutes.

CAUTION: Do not keep plaster on long enough to blister the skin—never over 15 minutes. If blistering occurs because plaster is left on longer than 15 minutes, apply Johnson's Baby Cream or Petroleum Jelly to soothe the irritated area. When used on children or adults with sensitive skin, place a layer of wet gauze or cloth between plaster and skin.

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for chest colds

The time-proved mustard poultice in modern, ready-to-use form

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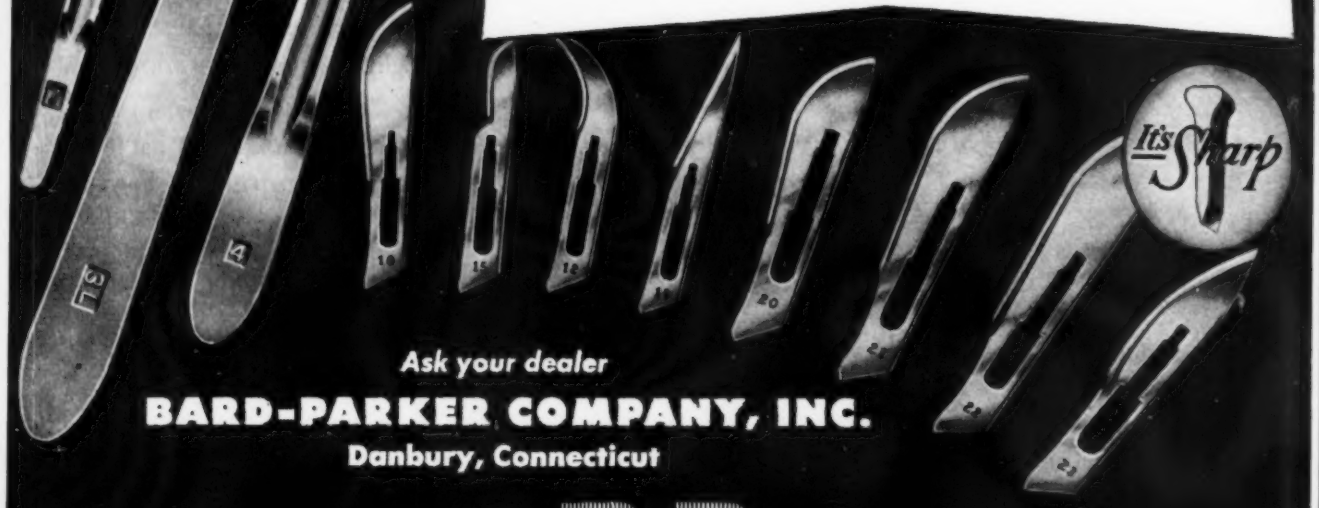

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*BOEHME, E. J.	The Treatment of Chronic Leg Ulcers	The Lahey Clinic Bulletin, 4:242 (1946)
BOWERS, WARNER F.	Chlorophyll in Wound Healing and Suppurative Disease	Amer. J. Surgery, LXXIII:37 (1947)
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LANGLEY, W. D. and MORGAN, W. S.	Chlorophyll in the Treatment of Dermatoses	Penn. Med. Journal, Vol. 51; No. 1 (1948)

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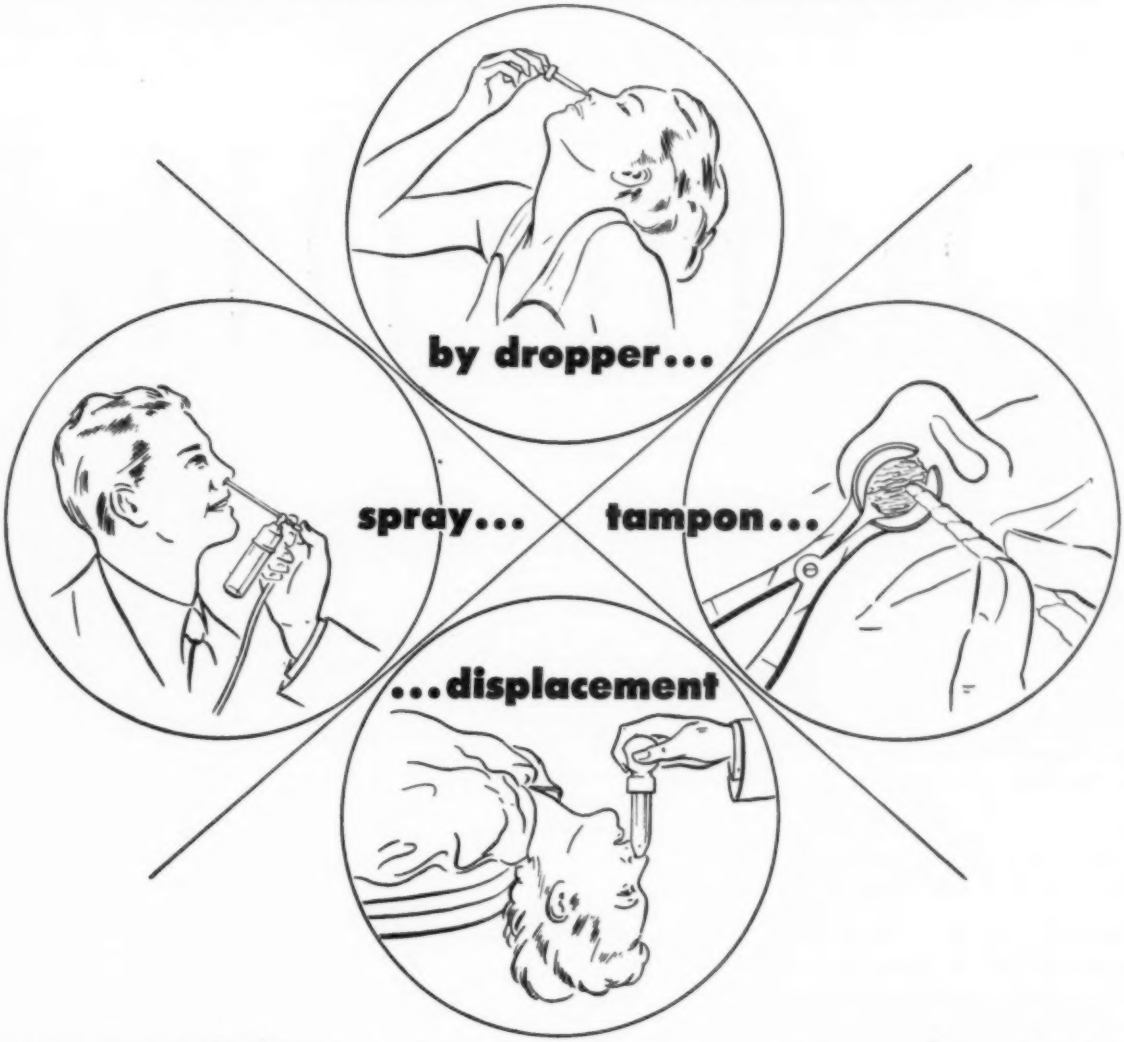

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Occupational Medicine: Its Role in the Social World
—The Ramazzini Oration—

RUTHERFORD T. JOHNSTONE, M.D.,
Los Angeles

It is with sober regard of the honor that I address this most unique society in medicine. I am especially conscious of the high standard set by my predecessors and of the historical theme to which they adhered. However, tonight's *pabulum menti* is a change in diet. In it, I hope, will be found one vitaminizing ingredient taken from the life of Bernardino Ramazzini.

It has escaped the historian that the father of occupational medicine was a practical and practicing social scientist. Indeed, it is unfortunate that the light and shadow with which history has etched his character should now reveal him almost solely as the author of the oft quoted question—"*quam artem exereat.*" A careful review of his writings and deeds impresses one with the fact that this man of Modena was interested in much more than just a worker's trade or the diseases peculiar to occupation. The quest of Ramazzini was also a sociological adventure, the like of which has been sought by few physicians before his time or since.

In the continual remembrance of the great achievements of medicine, and mindful of the contributions and sacrifices made by the scientist and practitioner alike, it is unbecoming for one of my stature to be offensively critical of my profession. Yet in the light of the circumstances existing in a troubled world I must observe that the road we tread is narrow. It does not ease the conscience to turn the head from neglected opportunity to watch proudly the passing parade of great physicians as they leave the temple of Aesculapius to cross the campus of time and enter the halls of modern science. With penicillin in our hand we can smirk at former fetishism; helping men live longer with less pain, we can forget that once we diagnosed evil and hanged witches. We have traveled far, but the path has not been wide. Along the way we have not stopped to erect missions for those who seek surcease from a turmoil about which the priest knows not.

It is my contention that except for the exceptional, the presently practicing physician is a slave to the conventional concept of disease (though of all of the phases of medical practice, occupational medicine is least deserving of such an accusation). To the great majority of doctors, ill health resides in causes demonstrable by bacteriology, pathology, physiology, chemistry, and radiology. Upon these sciences rests his *modus operandi*. In the contention that modern medicine follows a patterned process there is no intent to be unappreciative of basic and applied science. Full cognizance is taken of their essentiality and that without which medicine would be as archaic as religion and law. But the lines of medical endeavor have ignored social pathology. Certainly here is an uncharted sea, beckoning to a profession that deals most intimately with people, with the components of society. Psychiatry has launched its ship, but it needs a convoy. Alone it cannot weather the most turbulent waters of unrest humanity has ever known.

Social unrest is not peculiar to our time. History's seismograph has recorded former quakes of appreciable size, but the cumulative tremor is now at the highest peak ever traced. Only the willfully insensitive can fail to feel the increasing temblor, the size of which portends destruction to the whole social structure. Medicine as a responsible part of society must sense the need of therapy for hearts that are sick of fruitless homing. But before prescribing we need to consider the etiological factors.

The progress of humanity, whatever its mysterious direction, is not motored by mere momentum. Forces, groups and institutions increase its tempo. Likewise, these have at times, together with the hoodlums of history, slowed it down or even momentarily arrested it. But it has been the mistake of the past to believe that the progress of humanity is automatic; a mistake which produced a disinterest by too many people in the condition of humanity. This universal indifference has permitted an insidious illness to lay the world abed with nervous prostration. What causes it to shiver and shake?

For one thing, the cloud which mushroomed upward into the sky over Hiroshima on the morning of August 5, 1945, spread to form a fixed and fearful shadow over the minds of men everywhere. Man through his science had designed an instrument for his own destruction; he had blown up the bridges of hope for the future. It is not contended that complete destruction cannot be averted, but there are those who believe that time is running out. The average man does not comprehend atomic energy, but he does understand its destructive, far-reaching power. Within him is a fear—a fear that God is asleep.

Presented at the 1949 Rendezvous of the RAMAZZINI SOCIETY, at Muskoka Lake, Ontario, Canada, September 16, 1949.

Also, blending with the shadow cast by the atomic bomb is the ominous cloud fanning out in all directions from Russia. We are a frightened people finding no comfort in our own jaundiced, melancholic government. Since 1946 Communism has dominated our government's every act, and paradoxically at a time when America had reached a peak in world power higher than ever achieved previously by any nation. Despite this position our policy-making politicians have assumed an attitude of negation. Instead of acting ahead of Russia and independent of Russia, we have awaited its move, to then act contrariwise. In our frenzy to negate the Soviet philosophy we have relinquished our grasp of our own historic purpose.

As Archibald MacLeish points out in the August *Atlantic Monthly*, "ever since the American Revolution the image the American people have cherished is that of beginners and begetters, creators and accomplishers. We have stood *for* something, not merely *against* something. Now we are resisters. Resistance to Russia has become an end and an object in itself." In a similar vein Gerald Robinson wrote in *Foreign Affairs* that "our government is backing tail-first into the future."

Lacking strong, wise, and purposeful men in high places, the people within this nation are confused and divided. On one side we have those who foresee no great danger in Communism; who believe that it is a fad that will go the way of all fads. They consider "pinks" as college professors and that the only real "reds" we have are a few labor leaders. Opposed to this group are those who label all non-conformists as Communists, or any movement to which they object as being communistic. They are extremely busy being anti-everything. Despite the divergence in attitude both groups meet on the common ground of negativism since neither proposes any positive program to correct errors existing in our society which of themselves breed Communism.

I have cited the atomic bomb and the spread of Communism because they alone constitute sufficient reason for world-wide fear and unrest. But what gave rise to their being? What has produced the hatred which stalks the world today —hatred of nations, races, religions, classes, labor, corporations? Books and periodicals dealing with these malignancies have been profuse, but by and large they have missed the point. The novelist or the feature writer and others who should know better have focused attention on symptoms, not on the cause. The cause is sociologic.

What the world needs most today and for all future time is the application of sound scientific humanism. This truth is not to be detracted from by the scoffer who has come to feel that such expressions as "the dignity of man," "human destiny," the "rights of the individual," etc., are so much idle sophism, as indeed they have been. Likewise the social science which I propose to discuss is not to be likened unto the socialism of the New Deal in which that philosophy confused benefits with raising the social level; money with deeds.

Within the presently held concept, social science is new but not untried. During World War II the Foreign Morale Analysis Division was formed. Its activities are described in Menninger's "Psychiatry in a Troubled World: Yesterday's War and To-day's Challenge," and in Leighton's "Human Relations in a Changing World." In this Division were employed those trained in cultural anthropology, psychology, psychiatry and sociology. Their purpose was to determine the course to be taken by the Allies in dealing with factors of human psychology, social behavior, and patterns of culture among the Germans, Italians and Japanese. On first thought it would appear that we already knew about these from past general experience, from books and observations by journalists and travelers. Actually no. For much of this information was inaccurate, biased and distorted. Practically none of it was based upon scientifically oriented observation and analysis.

First of all it is necessary to understand the behavior of one nation in relation to other nations. "Understanding does not mean intuition and is not limited to sympathy. It means the grasp of causal factors derived from a process based on science. Such understanding should enable us to distinguish more accurately between the behavior that is possible for a country and behavior which we as a nation might want that country to adopt, but which is impossible given its situation and peculiar cultural patterns. Within the range of behavior that is possible for a country, we should be able to gauge better the effect of our own policies and actions and whether they produce the results desired or call forth responses that make worse the situation we wish to see amended."

"In addition to the images that other nations may have of us and we of them, there is the problem of discrepancy between reality and the images we have of ourselves as we move and act in relation to other nations. We have idealized pictures of ourselves and we have guilty pictures, and both are possibly as far from reality as are the distorted impressions other nations have of us. What we suppose as a generous effort to give support may be angrily treated as an attempt at exploitation. We are confident that we will never, without provocation, attack any nation with atomic bombs and so we discount the threat element in our possession of that weapon, while other nations with a different view of us, never forget it."[1]

Leighton suggests many other factors that lead to international strife, but he is quick to point out that these do not necessarily have to exist; that anthropology and history afford numerous instances of people who have lived and now live without an apparent urge to dominate other groups, as for example, Sweden and Switzerland. Whenever and wherever they do exist, however, the social scientist can evaluate the basic causes

and devise ways and means for their reduction or elimination. It is obvious that one nation acting under stress is a liability to another nation or a group of nations.

Those who form the policies of a nation do so with prejudice, aggression, and often hostility. By offensive or defensive tactics they attempt to get the ball they are carrying across the goal. Anything in the way of that attempt is to be blocked out either by force or by deception. Those in power often make decisions without knowing why, as is illustrated by one who said, "We are pressed for time this morning and must decide this matter at once; tomorrow we can figure out the reasons."

As to the relationship between nations, the sociologist believes a basis for action should be upon a studied understanding of each nation's virtues, attitudes, historic background, and present-day possibilities for cooperation or disagreement. He believes that these can be supplied to the advantage of a more perfect harmony. He believes the social structure of a nation determines greatly its action within the family of nations.

In considering the application of social science to the problem of world unrest I have, in a very limited manner, presented the viewpoints of the sociologist. Another member of the team of social scientists is the anthropologist. To those unacquainted with his function and who think of anthropology as a science devoted to measuring skulls, it would appear to have no place in any regime directed toward correcting human misbehavior. In 1928 Frank Boas wrote, "Anthropology is often considered a collection of curious facts, telling about the peculiar appearance of exotic people and describing their strange customs and beliefs. It is looked upon as an entertaining diversion, apparently without any bearing upon the conduct of life of civilized communities. This opinion is mistaken—anthropology illuminates the social processes of our times and may show us, if we are ready to listen to its teachings, what to do, and what to avoid."

In his recent book, "Mirror for Man," Clyde Kluckhohn states that "anthropology provides a scientific basis for dealing with the crucial dilemma of the world today; how can peoples of different appearance, mutually unintelligible language, and dissimilar ways of life get along peaceably together? Because of its breadth, the variety of its methods and its mediating position, anthropology is sure to play a central role in the integrating of human sciences. Certain aspects of psychology, medicine, human biology, economics, sociology, and human geography must be fused with anthropology in the general science which must embrace the tools of historical and statistical methods and draw data from history and other humanities. Since anthropology has explored the gamut of human variability it is capable of answering the question: what common ground is there between human beings of all tribes and nations? What differences exist? What is their source? How deep-going are they?"[2]

The sociologist evaluates the deeds, traits and attitudes existing in our present society, but the anthropologist goes back to first beginnings. He recognizes the material used to construct the pathway of culture or to be found in the bridges between different ways of life. From the minutiae gathered he can to a degree forecast social weather. His laboratory is the world of people who have accomplished certain ends or who are in the process of such accomplishment. He can sense the complications arising from uncontrolled variety of stimuli.

Anthropology is opposed to any movement seeking a world-wide sameness in culture. It believes that each enduring culture has been achieved from a historic past, from distinct geographic, physical, economic, moral and ethical patterns. It does not ignore the desideratum of eliminating the evils in such cultures. The anthropologist's solution to the present world situation is *unity in diversity;* that no single nation should impose its culture upon another. Thus his preachments are opposed to Communism or Fascism. As Lawrence Frank says, "Every culture is asymmetrical, biased, and incomplete, making a virtue of its deficiencies and its anesthesias. Each culture in grappling with the same problems has created patterns of action, speech, and belief, of human relationships and values that have accentuated certain potentialities of human life and have ignored or repressed others. Each culture seeks to represent itself by its aspirations, emphasizing its lofty ethical or moral goals as its essential character, and usually ignoring its shortcomings and its often destructive features .... No single culture can be accepted as final and best for all peoples; we must recognize the unhappiness, the degradation, the misery, the incredible brutality, cruelty and human wastage in all cultures which each tends to ignore while stressing lofty ethical aims and moral aspirations."[3]

Despite, however, the logic of the foregoing opinion, the people of every nation are being forced to choose a way of life that is to the extreme right or the extreme left. To admit as good *only* what is American, or Russian, or French, or Italian is unscientific. "Order is bought too dearly if it is bought at the price of the tyranny of any single set of inflexible principles, however noble they may appear to be from the perspective of any single culture. Individuals are biologically different, and there are various types of temperaments which reappear at different times and places in the world's history. So long as the satisfaction of temperamental needs is not needlessly thwarting to the life activities of others, so long as the diversities are not socially destructive, individuals must not only be permitted but indeed encouraged to fulfill themselves in diverse ways. The necessity for diversity is founded upon the facts of biological differences, differences in situations, varying backgrounds in individual and cultural history. The healthiest kind of a society would create citizens who wanted

to express themselves in ways that are both personal and socially useful."[2]

In short, the Fascist's idea of one-world would be subjugation to a single rule; the one-world of the Communist would surrender the individual's autonomy of the State, and the one-world of Wendell Willkie we are as yet not prepared to establish. It is futile and foolish to merge nations into a League of any type if they do not understand each other.

Many years ago while driving through the beautiful mountains of Pennsylvania our car boiled to a stop on the summit of Tuscarora. By peering through a telescope in the observation tower one could see in the distance the States of Virginia, Maryland and West Virginia. To me, then a very small lad, it seemed as if I were viewing the far reaches of the world. As far as I could see were the lush green farms and the yellow fields of wheat awaiting the harvest. On the distant horizon, were dark areas of various sizes and irregularly placed. I asked my oldest brother what caused those dark spots which seemed out of harmony with the bright colors. He explained that they were shadows caused by groups of trees. He then pointed out that if I took my eye off of these distant shadows and looked down close by I would see similar shadows from a similar source. Just so, if we turn our eyes from distant nations to our own, we see similar group shadows; not only grouped as to race, class or religion, but as to pursuits; physicians meet with physicians, lawyers with lawyers, priests with priests, business men with business men, laborers with laborers, actors with actors, farmers with farmers.

As MacIver emphasizes, "the strengthening of these groups and their group-bound thinking constitutes a grave peril in the social orientation of modern man. We tend to view the members of other groups—as members of other groups, rather than as persons. They are workers or employers; they are miners, or teamsters, or elevator operators. We see them in the light of the alleged attributes of their group, with all of the distortions fostered by the differences of interest or of station. The tendency itself is as old as the first Cain who was a tiller of the soil and looked askance on the first Abel, who was a keeper of sheep. But modern organization has enormously extended its range and intensified its expression. It is the business of every organization to assert its own interest over against the interests of other organizations .... thus there are many forces assiduously at work to propagate group consciousness and indirectly to minimize and weaken the integrity of the greater community .... It is a simple corollary that group differences are magnified out of all proportion to their significance, with the consequent development of inter-group tensions and antagonisms."[4]

In addition to, or, what is more likely, stemming from group antagonism are certain fronts such as the economic, political, religious, and educational. For this audience it is not necessary to enlarge to any extent upon your awareness of this truth. On the economic front we find a pronounced emphasis placed upon the superiority of one group over another. Economic interest is a major factor in racial prejudice. For instance, gaining possession of property by Jews, Negroes, or foreigners in a community populated by a dominant group gives rise to antagonism and economic boycott. On the economic front there is discrimination in the matter of employing members of certain minority groups. This is true not only in the field of unskilled labor but even in the higher professions. Nor are the guilty in this matter always employers. Labor unions which purport to be the defenders of the underprivileged are guilty of discrimination. When Henry Ford instituted a policy of hiring Negroes in proportion to their population ratio in the city of Detroit, there was considerable opposition from white workers. The union likewise opposed his policy of non-segregation within the plant. Later, with the advent of the CIO, this resistance diminished.

ON THE political front the attempt to break down group prejudice by law is fraught with danger. A law in itself will not abolish prejudice since too frequently such laws operate as coercion. Social evils must be removed by the overwhelming desire of people to correct them. Furthermore, most political measures in this regard are devoid of any proper understanding of the problem, a situation which serves to cut deeper the lines of demarcation. Blind political altruism will inevitably lead to a welfare state. An example of producing unwarranted demarcation of one group from another is to be found in the Proposition 4 which was passed at the last California state election. Certain self-promotors, in order to put across the revised old age pension bill, elicited the sympathy of the voters by including a rider for the blind. This resulted in the blind being set apart as a group of indigents, a situation they did not seek and did not want.

In considering the religious front no one would deny that the world needs a spiritual rebirth. The Church has taught us that the Kingdom of God will appear among us when the Kingdom of God is within us. It preaches the brotherhood of man, but while proclaiming this truth from the pulpit it has been guilty of intolerance as well as partiality. On Labor Day Sunday just past, the minister of a large Presbyterian church in Los Angeles stated that the Church has, on occasions, been guilty of taking sides. He reviewed cases in the latter part of the 19th century in which churchmen accepted economic beliefs which he termed as callous to labor and sympathetic to management. "In that day the church was apostate .... we now live to see the sad results of that attitude. Because of the church's callousness," he concluded, "it is now a sad commentary that relatively few laboring men are members of the Protestant churches." This admission, together with other observations on

the part of all of us, forces the recognition that the Church is not the great force in the social world that it could be.

What with our vast public school system, our colleges and universities, it would seem reasonable to expect that education would have by this time resolved our social problems. Yet it has done little. The way members of a group think is the way they have learned to think. I distinguish *learning to think* from being *taught to think.* This learning to think or what one thinks is, for the majority, a social product, the result of family, church, or community influence. Invariably the pattern is set before the individual reaches school age. There, unfortunately, it is not corrected, or rarely so. There is little or no attempt in our elementary or high schools to provide the student with even a minimum of conceptual tools and skills to employ in dealing with what goes on around him. Mental and emotional hygiene are practically unheard of in our educational system.

To those concerned with the problem of social unrest it is apparent that formal education is not the powerful agent it should be to correct existing faults. As someone has stated, in our present system fact is added to fact until the sum of the facts is equal to graduation. Necessary as this method is, it must be added unto by other instruments, in the field of education and outside of it, that will develop the mature mind. In explaining why human affairs are so fearfully out of joint, G. B. Chisholm remarked that "so far in the history of the world there never have been enough mature people in the right places." He and others who have been promoting the concept of psychological maturity contend that as yet not enough people have come to their mental adulthood; that in places of responsibility and power are found too often men of immature minds, which accounts for their intolerable thoughts and actions.

The concept of psychological maturity has been clearly delineated in a book, "The Mature Mind," by H. A. Overstreet, in which it is pointed out that the human being is born ignorant, irresponsible, inarticulate and self-centered. In keeping with this thought Diderot said years ago that all children are essentially criminal; that only their physical weakness prevents them from being destructive. If, then, the individual grows to adulthood with a mind that has never matured, that remains ignorant, irresponsible and destructive, the result is an unsatisfactory and dissatisfied member of society. Every day the acts of violence of individuals or groups testify to the childish mind in operation. Every day some individual sitting in a place of responsibility invokes tension by immature thinking and immature decisions.

"It is time for the world to realize that there exists a vast difference between the chronological age and the psychological age. A child may be an adult in his sense of responsibility, whereas an adult of any age may exhibit emotional reactions of an adolescent. The essential thing about an individual, we are being brought to realize, is not so much the number of years he has lived as the psychological competence that those years have netted him.... That we have by no means fully learned the significance of this insight is indicated by the fact that, except in the case of imbeciles and morons, we still admit people to all of the major perogatives of life on a purely chronological basis. The age at which schooling begins and ends is chronological; so is the age at which people may marry without parental consent; so is the age at which they are considered ready for responsible work; so is the age at which they can vote and hold office. After the members of our society have gained enough years to be rated as legally adult, society, except in the most flagrant cases, exercises no control over their daily exhibitions of immaturity.

"But as we become more fully aware that the chronological age does not necessarily betoken a correspondent emotional or social age, we can go seriously to the task of devising ways in which crass immaturity among adults—particularly among those in places of power—may be detected. Up to this date in human history we have had no accurate way of estimating the psychological maturity of Congressmen, or of a judge, or of a superintendent of schools, or a teacher, or a head of a corporation (or a leader of labor). Psychologically, in brief, we have flown blind.

"The concept of psychological age has only begun to enter our common consciousness. We are generally familiar with its application to children, but we are only beginning to be alert to the behavior symptoms in grown men and women that should warn us of their psychological immaturity; that should warn us, for example, against giving them a major chance to set the success standards of our society or to exert power over other people's lives. Also, we are only now beginning to ask how psychological immaturity can be overcome. We are only beginning, but this new psychological way of regarding ourselves and our human fellows is definitely on the books. When it is also definitely and clearly in our consciousness, we may be set for such a new appraisal of human behaviors as will preface a new society."[5]

THE consultation at the bedside of a sick world is concluded. I have attempted to note the pulse, the fever, the delirious cries of anxiety, and to chart recent developments in the case. The question arises as to whether the disease is a fatal malignancy or whether there is hope for recovery. The consensus of opinion of the consultants called in is that recovery will take place but the convalescence will be prolonged and painful.

The therapy to be applied must be derived from several sources but, before starting on a therapeutic regime, the patient must be convinced that he can get well, for he has long since and often moaned that "you cannot change human nature." To such pessimism Edward Embree

gives this answer—"We have not changed the nature of the physical universe, but by understanding it we have turned it in myriad ways to our service and our convenience. We did not set aside the force of gravity when we learned to fly. We did not amend the laws of stress and strain, we only had to understand them in order to build bridges and skyscrapers or to drive trains a hundred miles an hour. We did not alter the laws of biology to breed fleet horses and fat hogs, to grow corn and wheat of far finer quality than anything known in a wild state .... So with human nature it is not a matter of changing the fundamental drives and instincts; it is simply a matter of understanding these forces and turning them to more constructive and wholesome channels than the strifes and frustrations that make up so much of life, even in the midst of our material plenty."

The therapeutic efficacy to be found in psychology and the social sciences has been suggested in previous paragraphs. It is the contention of this thesis, however, that none of these can be effective in the area where social unrest is the greatest without the aid of occupational medicine. Certainly an understanding of the industrial worker is crucial to the understanding of present day society, since the industrial group is the largest segment of our adult society.

By no means is the program of industrial relations as presently engaged in by many industries to be considered as one of human relations. Its primary function is to minimize or remove friction between labor and management. To that end it has been useful. But an industrial relations program is devoid of the application of the social sciences and almost always ignores the utility of the occupational physician. It has failed to consider that step by step with our economic progress there has been a destruction of individual significance in living for the majority of workers. It does not and cannot see pain within a worker's heart or the unsatisfied yearning within his soul.

As a matter of fact, as Elton Mayo pointed out years ago, the cause of labor strikes does not necessarily or always arise out of a demand for higher wages, shorter hours, or better working conditions. These demands often disguise more deeply rooted desires for a change in the human or social situation to which both management and labor leaders have been blind. Such yearning cannot be satisfied by negotiating contracts. Labor leaders are to be censored equally with management in their failure to appreciate this truth. In their struggle to achieve individual power and self aggrandizement most leaders of labor have forgotten the real purpose of unionism. The securing of higher wages and shorter hours by the unions, or evidence of good will on the part of management by establishing cafeterias or soft ball teams, is not the answer to social unrest within industry; these may serve as group placebos but they do not furnish the individual a significance for living.

The only agency capable of accepting the challenge is occupational medicine. The tradition of medicine has endowed us for the task. It was Hippocrates who stated, "Where there is love for medicine there is also love toward man." The father of occupational medicine, Ramazzini, by his practice among workmen testified to the truth of Hippocrates' statement. Modern Ramazzinians the world over must do likewise.

NOT ONLY has occupational medicine fallen heir to the obligation but it also has erected over the years a structure to which can be added another room to house the concept of which I have been speaking tonight. A decade ago, before the Congress on Industrial Health in Chicago, Dr. Clarence Selby made the following statement: "Despite the fact that the industrial surgeon of 30 years ago has evolved into other specialties such as industrial medicine, industrial hygiene and now preventive medicine, there is need for further evolution. The industrial physician today must become to some degree a psychologist." I need not point out how correct Dr. Selby was, but I would like to borrow his expression and apply it to the present situation, namely, "there is need for further evolution."

The world can look to clinical, experimental and research medicine for preventive and therapeutic progress; it can trust God that there will always be more Bantings, Flemings, Kendalls or Whipples. But only to occupational medicine can it look for further evolution in the treatment of men within an industrial society.

I would not presume at this time to dictate the manner or method of how this is to be accomplished. Obviously it will require educational implantation of the concept within the minds of medical students, the industrial physician, management, and labor. The goal to be achieved will not be reached quickly; few worthy endeavors have. Nor is the goal an idealistic impossibility. Any one who thinks so should be reminded of what has been accomplished in occupational medicine since the turn of the century, an accomplishment which in 1900 would have been considered fantastic, an idle dream of those who dwell in the periphery of practicality.

Fellow Ramazzinians, I close on this note. Medicine in general has given length to life, but, as Stieglitz says, life should be multi-dimensional; it needs depth and breadth. To me it seems that this need is especially evident in the industrial group. If so, occupational medicine will aid in this attainment.

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The Conservative Treatment of Industrial Intervertebral Disc Injuries

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THERE is no more challenging problem to the doctor who treats industrial injuries than the treatment of industrial backaches; and there is probably no more perplexing problem than the question of correct diagnosis and subsequent treatment of those cases of backache which present features suggesting a diagnosis of ruptured intervertebral disc. That the present treatment of these cases in industry is highly unsatisfactory is evident to anyone who has treated or examined many of them.

It is the purpose of this paper to present the results of treating 15 referred cases in which a diagnosis of ruptured intervertebral disc had been made, and in many of which surgery had been recommended, owing to previous poor response to treatment. None of these patients was subsequently operated upon, and it is our contention that surgery was not indicated in view of the subsequent satisfactory response to conservative treatment. It is very evident that the end results of surgery upon cases with a diagnosis of ruptured intervertebral disc are poor in industrial cases. Marble and Bishop[1] reviewed the records of one of the largest industrial insurance companies in the United States. These represented a cross-section of the operative results of neurosurgeons and orthopedists throughout the country in treating cases with a diagnosis of ruptured intervertebral disc. Their review revealed that approximately 20% of the cases with suspicion of herniated disc were operated upon. They classed as excellent results those patients who were able to resume their former occupation in six months; there were only 37% in this category. Fifty-three percent of the operated cases had disability lasting longer than one year, and were classed as poor results. They found that the cost of treating a patient with a poor result was over 10 times that of treating a patient who made a quick recovery.

Aitken and Bradford[2] reviewed 170 industrial cases that were operated upon for ruptured intervertebral disc by neurosurgeons and orthopedists of outstanding merit. They found that in 40% of the cases no abnormality of the disc was demonstrated at operation. Only 20% of the operated cases were able to return to heavy work. Forty-two percent were still receiving compensation two to six years after injury. The author has been informed by the claims managers of several large industrial insurance companies in the Southern California area that from 70 to 90% of the operated disc cases finally come to a permanent disability rating before the industrial accident commission, the usual rating being between 40 and 50% (approximately $4800 to $6000).

The cases referred to in the present paper were treated in the offices of J. D. PELUSO, M.D. The author wishes to acknowledge DR. PELUSO's help in treating many of these cases.

IN THIS paper we will present a method of treatment for those cases in which poor results may be anticipated. With this treatment a relatively rapid return to former occupation, without surgical intervention and usually without settlement, can be anticipated. As a background for this presentation it is necessary to analyze the reasons for these poor results. In this connection it is important first to point out the marked divergence of opinion relating to the criteria established by various authors for diagnosing injury to the intervertebral disc.

Depending upon which author one happens to read, one may assume that significant lesions of discs are extremely rare or extremely common. Dandy, as quoted by Lenhard,[3] states that all recurrent low back pain, with or without sciatica, is caused by injury or abnormality of the intervertebral disc. Key[4] states that idiopathic low back pain is synonomous with a lesion of an intervertebral disc in the affected area.

Opposed to these views are those of Ober[5] and Marble.[6] The latter states that in his personal cases significant lesions of the intervertebral disc represent probably less than one-tenth of one percent of the backaches which come to his office. Ober states that about one-hundredth of one percent of all lame backs might come in the province of the herniated disc syndrome. In other words in about only one in every 10,000 backaches might a significant lesion of the disc be present. Thus it is possible to conclude that practically every case of industrial backache is due to a disc lesion, as did Key and Dandy; or it is possible to conclude that backaches due to disc lesions are so rare that only about one in 10,000 might be due to this, as did Ober. Intermediate views are expressed by most authors; they consider that a small percentage of patients with backache have a protruded disc as the underlying cause.[7,8] It is obvious, therefore, that the diagnosis of a ruptured intervertebral disc is a difficult and controversial problem. In this connection it is interesting to draw attention to the comment of Mennell,[9] who, writing in the *New Zealand Medical Journal*, stated that there seem to be many instances where the scientific background and rationale for diagnosing the "disc lesion" is just as lacking as in the osteopathic diagnosis of "the little bone out of place" or the "osteopathic lesion."

There is a fairly well established classical clinical picture of herniated disc syndrome, such as was first brought to prominence by Mixter and Barr[10] in 1934. Many authorities are of the opinion that the diagnosis of herniated disc should not be made unless most or all of the features of this syndrome are present.[4,6,11,12] In this connection I think it behooves us in treating industrial cases to make the diagnosis only when

this classical picture is present. Assuming that we do make a definite diagnosis on that basis, we find that surgery is still not the primary treatment of choice according to the consensus of opinion of those engaged in treating a large number of cases. This is true in private cases; but it is even more true in industrial cases since we see a much higher percentage of poor results in industrial cases.[12,13,14,15]

A review of the literature reveals that most men are strongly in favor of initial conservative treatment. Flotow[11] states that a large percentage of cases can be cured by conservative means, and advocates at least three months of conservative treatment. Grant[16] states that it seems presumptuous of the surgeon to interfere until he has given nature a chance, since the results from surgical treatment do not seem sufficiently good to warrant surgery in most instances. He further states that nature will care for many of these sufferers exactly as was the case prior to 1930. Adson[15] states that surgery should be resorted to only when palliative measures have been given a fair trial and have failed. Key[4] concludes that in many cases the symptoms of intervertebral disc lesions subside spontaneously, and in most others the patients can be relieved by conservative treatment. Spurling[12] says that surgery should never be performed until conservative treatment has been given a fair trial. Barr[17] states that operative treatment should be reserved for those who have intractable pain in spite of adequate conservative treatment over a period of about six weeks. Stryker[2] states that he never operates on a disc case who has not had a good long period of conservative treatment. Chandler[18] states that it is well to err on the conservative side since the prognosis in any case is at best somewhat uncertain. Jelsma[19] states that he uses palliative treatment in all disc cases as long as patients note improvement. It is therefore obvious that conservative treatment is the primary treatment of choice in the opinion of most men; yet Aitken and Bradford[2] found that many industrial cases were operated on for a ruptured intervertebral disc before a trial test of conservative treatment had been given.

Most authors consider this period of conservative treatment should extend from six to 12 weeks; some advocate an even longer period. The conservative therapeutic measures employed are varied, i.e., braces, enforced bed rest with boards, avoidance of forward flexion, traction, etc. It is noteworthy that in the hands of some men conservative treatment seems to give better results than in the hands of others, and it appears therefore that the type of treatment which one accords under the heading of conservative treatment is of paramount importance in many instances in deciding whether or not conservative treatment will be successful. It is our contention that the employment of the proper type of conservative treatment is one of the most important factors in this problem. There are undoubtedly several types of conservative treatment which can be employed successfully. In this connection we believe that the method of active and passive back and leg stretching exercises and back manipulations will give as good as or better over-all results than other methods of conservative treatment. This method was described by Billig[21,22] and the author[23] in previous articles. The major features of this treatment involve the progressive release of fascial ligamentous contractures which can in many instances be shown to cause sciatic nerve irritation; the progressive mobilization of stiffened joints is also carried out. The exercises and manipulations possibly also release adhesions which could produce a syndrome of ruptured intervertebral disc due to nerve root or peripheral nerve irritation.

In the future much aid in this problem can probably be obtained by the use of the relaxin principle involved in the steroid body chemistry. It is probable that many cases of chronic backache, with or without sciatica, are to some extent caused by fascial-ligamentous contractures along the course of the nerve roots or peripheral nerves. These probably can be efficiently treated by this relaxin principle.[24]

Case Reports

WE SHOULD like to present a method of treatment of industrial low back injuries which for the past two years has proved very effective. Operative treatment has been obviated. Patients have returned to their former occupations relatively quickly. Settlements and disability awards have been reduced to a minimum. A previous paper[23] summarized the results of treating 90 consecutive industrial back sprains in 1947. In 1948 the author examined about 400 cases of industrial back sprain and actively treated about 200 of them. These were consecutive, unselected cases. Many of the patients had injuries which were acute sprains which we treated initially and for the entire subsequent course of treatment. Others were cases that were referred to the office after a previous period of treatment with unsatisfactory results, and which were subsequently treated by us; still others were cases that were referred to us only for examination, evaluation, and recommendation for further treatment. We, therefore, had the opportunity to examine and treat industrial back sprains in all stages and of all degrees of severity.

As stated above, treatment was actually undertaken in about 200 cases during 1948. It was noted that the results obtained in treating these cases were in keeping with the good results previously reported by the author.[23] In the referred cases many of the patients had been disabled for a considerable period. In these cases the period of treatment and disability was somewhat prolonged as compared with the period of treatment and disability in the acute cases, but even here the results were gratifying in the relatively early return of these patients to their former occupations and the disappearance or alleviation of the symptoms. It was obvious, particularly in treat-

ing the chronic cases, that conservative measures such as mere bed rest, diathermy, massage, procaine injections, and avoidance of exercises were often times not sufficient to bring about relief of symptoms so that the patient could return to work. Many of the chronic cases that were referred were sent to us by various insurance companies for our opinion regarding the advisability of surgery or suggestions for further treatment. In this connection, it is important to point out that in the 200 cases which we actively treated we did not once recommend disc surgery. It was our contention, subsequently confirmed by our results, that these men could be returned to work with the proper type of conservative treatment. It is true that a small number of patients had some residual symptoms, but these usually preceded the industrial injuries and could probably be attributed to deformities, advanced hypertrophic osteoarthritis, psychoneurosis, or malingering.

In the group of referred cases that we treated 17 were sent with the diagnosis of herniated intervertebral disc; and in many of these the previous recommendation had been made that surgery be performed. While this may seem to be a very small number of cases from which to attempt to draw any conclusions, we believe it is nonetheless a significant group since many other cases could be included with them. These cases would be the ones that were treated by us from the time of injury, and in whom a diagnosis of herniated intervertebral disc would in many instances have been made. As shown previously there is a very marked divergence of opinion as regards the diagnosis of herniated disc injuries. We made the diagnosis only in those cases in which the classical symptoms and signs were present. We have not included these cases in this discussion since these patients under the same program of treatment as outlined below made excellent progress and returned to work in a relatively short time, though treatment in these cases was usually prolonged beyond that needed for treating cases without evidence of peripheral nerve or nerve root irritation. It was the purpose of this paper to discuss only those cases that were referred with a diagnosis of herniated disc, and in which previous treatment had been undertaken, or in which surgery had been recommended. Thus it is possible to make some comparison of the value of the different types of conservative treatment in bringing about recovery without surgery.

There were two interesting postoperative disc cases in this group of 17 cases. Both had marked restriction of all low back motion. This was particularly marked in one who had been operated upon three and a half months previously, and who had been under treatment for one year. The other had been under treatment four months, and had been operated upon also three and a half months previously. Both of these men when first seen by the author had considerable complaint associated with significant objective findings. They were immediately placed on the same routine of treatment we have employed in treating all back sprain cases, that is active and passive back and leg progressive fascial-ligamentous stretching exercises and back manipulations. Improvement was marked and dramatic. The patient who had been disabled for one year was released to work in two and a half months with no complaints and a good range of painless back motion. The other patient returned to work in two and a half weeks with an excellent range of painless motion; considerably ahead of his former prognosis. At the present time these cases are closed. It is probable that both cases would have terminated in a settlement in view of the slow response to previous treatment that they were evincing prior to starting the program of active treatment as mentioned above. Yet, both these men returned to former employment, one to heavy work, in a short period of time after initiation of the same type of treatment we have employed in treating back sprain cases. The significance of this in the consideration of postoperative disc cases who are headed for a settlement is outside the scope of this paper, but certainly it points toward a method of treatment which should be considered in postoperative disc cases, perhaps as part of routine postoperative treatment.

In the group of 17 cases there were three that did come to a settlement. The settlement figures however were comparatively low on two; the third is still pending. One of these three was a patient with spondylolisthesis who had had a diagnosis of ruptured disc, and yet certainly did not have neurological signs to warrant this. He was able to continue working, and a light settlement was made on the basis of intermittent, nondisabling low back pain occasionally associated with sciatic nerve radiation. This patient had a history of the same type of pain nine years prior to his last injury, and at the time of settlement was asymptomatic and working.

Another settlement, with a low figure, was reached in a patient whose injury was of questionable industrial origin, and who had considerable personnel difficulty. He was psychoneurotic, and we believe that if surgery had been performed, he probably would have demanded a considerably higher settlement. As it was, upon release from treatment he was free of objective findings; but settlement was made in view of moderate subjective complaints, with an understanding of the underlying psychoneurotic problem involved.

The third case was also a marked psychoneurotic. He had been examined by numerous neurosurgeons, and opinion as to diagnosis had been varied. A diagnosis of ruptured intervertebral disc had been made, and also a statement had been submitted by another neurosurgeon that there was no herniated disc. The last neurosurgeon stated that this patient should fully recover with exercises and physiotherapy. This patient was treated for six weeks during which time he made excellent progress, but, when released to return to work, refused to do so, or to

return for further treatment as indicated. He was predominantly a psychoneurotic problem, with such marked stammering that at times it was impossible to understand him. We are of the opinion that if disc surgery is undertaken in this case, it will certainly terminate in a poor result, with a large settlement. This patient has been awarded continuing treatment.

The remainder of the cases (12 out of 15) have had a satisfactory response to treatment, and with insurance company follow-ups of at least six months, are continuing satisfactorily. The majority of these cases are closed at this time.

In three cases the complaints were on the basis of structural changes and not disc trauma, per se. One patient 60 years old had advanced hypertrophic osteoarthritis with bilateral radiating posterior thigh pain. He had no significant neurological signs, and his pain was well controlled with salicylates. He had a good range of motion, and was able to work as a welder.

Another 58 year old patient was a short, squat, obese individual with poor posture, pronated feet, significant inequality of leg lengths, unstable lumbosacral angle, and moderate hypertrophic osteoarthritis of the lumbosacral and sacro-iliac areas. He was treated for the above mentioned findings and responded well. He was released to work two and a half months after we started treatment; he had previously been under treatment for nine months. At the time of release he had a slight amount of chronic back pain which was consistent with his x-ray findings, and his case is now satisfactorily terminated.

Still another case presented talipes equinovarus of the left foot, with congenital under development of the left lower extremity associated with uncorrected shortening, and advanced degenerative changes with marked narrowing of the lumbosacral joint. This patient responded well to treatment, even though he did have some residual minor complaints which are understandable in view of the findings which existed prior to his injury.

Thus there were three patients who had sufficient cause for low back pain associated with sciatica on the basis of structural changes which pre-existed the injury, and who responded well to conservative treatment. The diagnosis of herniated intervertebral disc was unwarranted in these cases, and was dangerous in that it implied surgery in view of the previous unsatisfactory response to adequate conservative treatment. Disc surgery would have been of no value in these patients and would probably have resulted in a back neurosis following the absence of improvement with surgery. However, with adequate conservative treatment it was possible to treat these patients satisfactorily and their cases are now closed.

In two cases, apparently the sole criterion of diagnosis of ruptured intervertebral disc was sciatic pain. In one of these cases the sciatic pain lasted only two days, and the patient returned to work two weeks after we initiated treatment. In the other, the patient was free of sciatica after one treatment, and returned to work 11 days after we commenced treatment. We do not believe that the diagnosis of ruptured intervertebral disc should have been made in either of these cases. In spite of the presence of sciatic radiation of pain, there were no objective neurological findings; and the rapid response to treatment testified to the relatively minor nature of the injuries.

There were seven non-operative cases in this series who did present significant findings that warranted a diagnosis of ruptured intervertebral disc. Even in this group all the classical signs were not present in all cases, but enough were present so that a reasonably certain presumptive diagnosis could be made.

FINAL DIAGNOSES

Psychoneurosis—(as major element)	2
Back sprain	6
Associated with significant structural changes	4
Associated with transient sciatica	2
Total without significant disc injury	8
Probable ruptured intervertebral disc	7

The average period of treatment in these latter cases, after referral to our office, was a little over two months. We hospitalized five of these seven cases, usually for about 10 to 14 days; at first with bilateral Buck's extension for several days, then with graduated exercises in bed in association with diathermy and massage, and then more active exercises prior to release from the hospital. In general, we released patients from the hospital when they could walk with an erect posture and without severe pain. These cases were then followed with active and passive back and leg fascial-ligamentous stretching exercises and manipulations, usually three office visits a week. As noted above, the usual course of treatment lasted slightly more than two months, the shortest period of treatment being one month, the longest almost five months. All these patients have returned to work, and all returned without any settlement. The follow-up period in these cases has extended over a period of at least six months, and the patients have continued working. All have returned to their former employment. One is working at his former occupation of carpenter, but not doing heavy carpentry work owing to occasional soreness in the low back area.

Discussion

IN THIS group of 15 non-operated diagnosed disc cases, the method of conservative treatment which we have referred to appeared to be very effective. In the two postoperative disc cases it was of marked value in accelerating return to work, and in warding off a probable settlement.

The three cases which have come to a settlement would have reached a settlement, we believe, regardless of the type of treatment. Two were asymptomatic at the time of settlement, and the third has been awarded continuing treatment. He is predominantly a psychoneurotic problem,

and we believe that treatment in his case should be undertaken with that in mind. Certainly the result of disc surgery in such a case as his could be disappointing, particularly in view of the last neurosurgical examination which did not disclose evidence of disc injury. In those seven cases in which we concurred in the diagnosis of herniated disc all patients have returned to work, and no settlements have been made, though one is not yet closed.

An important factor in treating patients with possible ruptured intervertebral disc is their response to conservative treatment. As noted before, many authors put a relatively short time limit on this treatment, others a comparatively long limit. Some surgeons will operate as soon as the diagnosis is made, while others hesitate to operate while the patient is making any progress, regardless of the time involved since initial injury. In our group of 15 non-operated cases there were 12 who returned to work without settlement. The average length of treatment of these patients, prior to referral to our office, was seven weeks. Many surgeons would state that this constituted a sufficient trial of conservative treatment, and that, if patients were still complaining at the end of seven weeks, surgery was indicated. Yet it is significant that these cases did respond well to a different type of conservative treatment from that which they had received previously and were able to return to work without surgical intervention.

We believe the type of conservative treatment is very important. It is important to realize that conservative treatment does not merely imply bed rest, diathermy and massage, back braces or other palliative methods which often times are not effective. It is our impression that more vigorous physical treatment of acute back injuries is indicated; in the relatively minor cases as soon as the patient is seen; in the very severe cases after a few days of hospitalization with traction.

Summary

THE treatment of 17 cases of industrial low back injuries with referral diagnosis of herniated disc is presented. These cases comprise all referred cases with that diagnosis selected from about 200 cases of back sprain treated by the author in 1948. The treatment employed in all cases was active and passive progressive fascial-ligamentous stretching exercises of the back and legs combined with back manipulations. Two cases so treated were postoperative herniated disc cases. Their return to work was markedly accelerated by this method of treatment. Of the remainder who were treated conservatively:

(A) Two received a light settlement and one received continuing treatment. Two of these three patients were clased by us as primarily psychoneurotic problems. The third had a pre-existing significant congenital deformity.

(B) Twelve returned to former work without settlement. Five of these did not have disc injuries. Seven probably did have significant disc injuries. Treatment in this latter group averaged slightly over two months.

2. A review of the literature reveals that the results of surgical treatment of industrial cases diagnosed as ruptured intervertebral disc are poor. Conservative treatment is advocated by most authors, but the varying results of conservative treatment testify as to the increased efficacy of certain methods as compared to others. The average period of treatment prior to referral in the non-settlement cases was seven weeks. Yet these cases subsequently responded satisfactorily to the form of treatment mentioned above. This indicates the paramount importance of a course of conservative treatment of the proper kind, and that surgery should be considered only in those infrequent cases which fail to show a satisfactory response.

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Employment of Hypertensives in Industry

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PRIOR to the war period, physical standards for employment were set so high that frequently a worker who was capable of satisfactory employment in several occupations was eliminated from the industrial force on the basis of physical findings. According to Poole,[1] the use of the physical examination as a bar to employment instead of an aid to maximum utilization of workers has resulted in resistance to examining programs in many industries. These high standards applied to a number of common causes for rejection which included blood pressure.

There is still a variation of opinion as to what should be considered as a normal blood pressure level. Best and Taylor[2] have stated that although it is difficult to draw a sharp line between normal and abnormal, an elevation above the average normal for a particular age of 15 mm. in systolic and 8 mm. in diastolic may be considered as definitely abnormal. In this connection, reference is made to Hunter's[2] compilation based on observation of a quarter million of healthy Americans. One of the standard textbooks of Physical Diagnosis[3] states that a systolic pressure constantly over 150-160 mm. or a diastolic over 90 mm. is considered abnormally high. Insurance companies and the armed forces still insist on 140/90 as the acceptable level.

Master[4] and his associates in their study of a group of 15,000 normal men and women, 40 years of age and over, and in all walks of life, reported that in 41% of the men and in 51% of the women, the blood pressures were found to be 150/90 or higher. Steinberg[5] recently stated that the standards of blood pressure, particularly in industry, need some intelligent revision relative to what should now be included as "standards of high range normal."

During the past few years the general public has become more health conscious. Cardiovascular diseases and especially hypertension have been receiving appreciable publicity on the radio and in the public press. A recent editorial in one of the popular lay magazines[6] gave a frank and optimistic discussion of hypertension which prompted the writer to review the records of a group of employees who, with known hypertension, were hired to work in a large aircraft industry which was primarily engaged in manufacturing engines and where the standards of industrial hygiene and safety were maintained at the highest level. The hazards of this industry which were well described by Eisenbud[7] are typical of all machine shops and foundries.

Almost all of these people were hired during the recent war period when industry was forced to scrape the bottom of the man-power barrel. In order to meet the demands of a busy and rapidly expanding industry, the physical qualifications for employment were lowered. The blood pressure standard was lowered to the point where 180/100 was acceptable provided there was no history of coronary disease or cardiac failure, or any clinical evidence of cardiovascular renal disease. Functional murmurs and occasional extra systoles were acceptable.

Each applicant was given a complete examination, including x-ray of the chest, urinalysis and test for syphilis. Blood pressure determinations were made according to the technique recommended by the joint committee of the American Heart Association and Cardiac Society of Great Britain.[8] Applicants with abnormal heart shadows, urinary albumin, or glycosuria were not accepted. Those whose blood pressure levels remained high during several repeated determinations were considered disqualified. Those applicants, who were found qualified for employment, were advised to report monthly and later bi-monthly for follow-up examinations. Although busy production schedules and rapid labor turnover did not permit a close follow-up, most of these employees, received an average of 10 examinations.

Because of mass lay-offs after VJ day, this group was reduced to 89 employees whose medical records disclosed the following interesting information:

All but six who had been hired in 1946 had continuous service for about 10 years, with the exception of one to three short lay offs. Ninety-eight per cent were men and 2% were women; 27% were in the 20-30 age group; 24% were in the 31-40 age group; 29% were in the 41-50 age group; 13% were in the 51-60 age group and 7% were over 60 years of age. At the time of hiring, only one gave a cardiac history and only three were found to have clinical evidence of heart disease. It is interesting to note that these four men, who were in the 41-50 age group, were hired against medical advice because of the need for their special skill. These hypertensives were employed in almost every job in the plant.

At the time of employment, all were advised concerning their abnormal blood pressures and urged to consult their physicians. Of the 20 who followed advice and received treatment, nine were improved.

The records disclosed that 15 of the workers complained of symptoms of hypertension and lost a total of 306 work days, during the 10-year period (Table 1).

Table 2 compares the accident frequency of the 89 employees who had hypertension with that of 89 employees of similar ages who were doing the same type of work and were found to have blood pressures within the generally accepted normal limits. Although the employees with hypertension as a group had less accidents and a negligible number of lost-time injuries, the hyperten-

TABLE 1.
HYPERTENSIVE EMPLOYEES

Age Group	Number in Group	Number with Hypertension Symptoms	Time Loss in Days Because of Hypertension	Number Obtaining Treatment	Number Improved
20-30	24	3	45	2	2
31-40	21	5	121	7	3
41-50	26	4	50	7	4
51-60	12	1	30	2	0
61-70	6	2	60	2	0

TABLE 2.
COMPARISON OF NUMBER OF ACCIDENTS

Age Group	Of 89 Hypertensives	Of 89 Non-Hypertensives
20-30	208	276
31-40	166	245
41-50	172	318
51-60	90	48
61-70	8	0
Total	644	887

sives between 51 and 70 years of age had more accidents than those in the same age group whose blood pressures were within normal limits. The latter group of hypertensives included the four individuals who were hired against medical advice because of clinical evidence of cardiac disease. This appears to confirm the statement of Zapp[9] that a man suffering from circulatory disturbances may be more liable to types of human failure which lead to accidents than a man in normal health. Ohlhausen,[10] in his study of handicaps in industry, reported that a group of hypertensives, 2.89% of the total employment group, had 5.26% of the accidents. Brown and Butsch[11] at Bell Aircraft Corporation, Georgia Division, reported that during 1944 there were 130 hypertensives (160-200 systolic, 90-100 diastolic) among 27,507 employees. The termination rate of the total plant production was 38.1% and of the hypertensives 21.5%. Termination for reasons of health among total plant population was 9.47% and among hypertensives 5.4%.

Sprague[12] suggests that the hypertensive, excluding malignant hypertension and renal failure, usually maintains his strength and employability for many years, especially if he is placed on light precision machines or similar work.

Kuhn[13] shows that employment records of hypertensives are not too bad and that their performance is satisfactory. Naturally, a worker with congestive failure, syphilis, nephritis, alcoholism or extreme obesity must be rejected.

White[14] states that men with high normal, or even slightly elevated blood pressures are stronger, more alert and have more endurance on the average than those with low normal or slightly depressed blood pressure—say 150 mm. to 160 mm. systolic and 90 mm. to 95 mm. diastolic, in comparison with 100 mm. systolic and 65 diastolic.

The trends of the blood pressures of this hypertensive group over the 10-year period were noted and recorded as shown in Table 3. Although the trends appeared interesting, this information is of small significance because of the small number of employees and because many blood pressure readings outside the arbitrary normal limits, as pointed out by Foulger,[15] may be due to many factors independent of the worker's occupation, such as improper nutrition, drugs, fatigue, etc.

TABLE 3.
BLOOD PRESSURE TREND IN TEN-YEAR PERIOD

Age Group	Increased Systolic and Diastolic	Decreased Systolic and Diastolic	Decreased Systolic—Increased Diastolic	Increased Systolic—Decreased Diastolic	No Change
20-30	9	4	4	5	2
31-40	7	7		5	2
41-50	9	7	4	4	3
51-60	2	4	2	2	1
61-70	3	2			1
Total	30	24	10	16	9

SUMMARY: Industrial performance and accident records of 89 hypertensives are compared with those of an equal number of non-hypertensives in similar work. The incidence of accidents in this small group of hypertensives is significantly less than in the well group. The findings reported here, in conjunction with cited previous studies and the opinions of quoted leading cardiologists, indicate hypertensives to be good industrial risks and that many individuals with blood pressures above the usual arbitrary normals can serve industry satisfactorily over long periods. It is suggested that the so-called normals of blood pressure for pre-employment industrial examinations be revised upward.

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Injury vs. Gout

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THIS discussion concerns the study of 90 cases of gout. In a series of 4500 consecutive industrial accident cases examined from 1945 to 1949, 38 cases of gout were found upon examination for alleged industrial accidents, an incidence of not quite 1%. In a series of 6000 consecutive private cases examined from 1941 to 1949, 52 cases of gout were found, an incidence of not quite 1%. In the industrial group there were 33 male and five female patients, a ratio of approximately 7:1. In the private group there were 66 male and 24 female patients, a ratio of approximately 4:1. Fasting blood uric acid levels were determined in one-half of the cases, and fasting blood cholesterol levels were determined in one-third of the cases. The average level of fasting blood uric acid in the industrial group was 4.2 mgm%, and in the private group it was 4.5 mgm%, an almost identical level. The average level of blood cholesterol in the industrial group was 248 mgm%, and in the private group 249 mgm%, an almost identical level.

In the industrial group, eight cases occurred between the ages of 30 and 40, and 29 cases between 40 and 60. One was in the 7th decade. In the private group, two cases occurred in the 20—30 age group, nine in the 30—40 age group and 34 in the 40—60 age group, six in the 6th decade and one in the 8th decade.

Occupation was not significant from a diagnostic standpoint, and Sydenham's observation that gout affects "more rich men than poor, more wise men than simple," does not hold good in this series. Practically every case in the industrial group was engaged in strenuous labor, and in the private group not more than 10% of the men could be classified as well-to-do middle class individuals; approximately 10% of this group were housewives who cannot be classified according to Sydenham's observations.

There were only a few cases who showed evidence of neurovascular and/or cardiovascular renal disease. In the industrial group was one with hypertension, one with Buerger's disease, which developed four years later, and three who were admittedly allergic to certain foods and/or pollens. There were no cases of nephrosclerosis. In the private group were six with hypertension, and four with fixed low urinary specific gravity and evidence of nephrosclerosis, and two who were admittedly allergic to certain foods.

Of the 38 cases in the industrial group, seven admitted frequent use of alcohol; two claimed to be total abstainers. Of the private group of 32 cases, 23 admitted daily use of alcohol and occasional cocktail parties, none was a chronic alcoholic, and seven claimed to be total abstainers.

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In both groups a characteristic description of our present American diet of high protein, high fat and high carbohydrate was given by almost every individual; bacon and eggs, omelette, ham and eggs, fried or broiled steaks and chops, hot cakes, fried potatoes, gravy, and pastry. There were those who occasionally had an excess of trout while fishing, or game while hunting; almost all took coffee and a large number had several cups a day.

Because of the high fat content of the diet usually described by these individuals, an estimation of blood cholesterol was investigated. When the levels of blood uric acid were high, cholesterol was usually high.

GOUT is a disease of individuals who have an inborn error of purin metabolism. Individuals may have this defect in metabolism without disabling symptoms of the disease. When the disease produces symptoms, they may be acute, but fugitive, or acute inflammatory, sub-acute, or chronic. It is characterized chiefly by the sudden explosive appearance of attacks.

The synovial lesions are characterized by an hypertrophic layer of mesothelial cells with an infiltration of chronic inflammatory cells and some diffuse fibrosis. The peri-arthritic lesions early tend to be nodular with necrotic centers, surrounding which there is a dense cellular growth of young fibrous tissue. This type of tissue invades the adjacent tendon and bone.

Microscopic sections of tendon invasion show large areas of necrotic tissue in which no cellular structure is discernible. Surrounding these regions are heavy growths of young fibroblasts, which tend to be arranged somewhat perpendicular to the caseous center. And around these areas there is a dense growth of rather collagenous connective tissue. Sections of involved bone show numerous large areas of bone destruction replaced with rather a collagenous connective tissue. There is practically no marrow to be seen. This type of lesion may weep crystalline uric acid; later the whole lesion is transformed into an amorphous mass of pale, soft plastic material with a few reddish orange areas scattered throughout. Microscopic study reveals a very large number of very small, needle-like crystals which give a positive murexide test.

Minor incapacitating attacks are characterized by fleeting pains in the shoulders, elbows, wrists, hands, knees, ankles and feet, muscle origins and insertions. These complaints are commonly diagnosed fibrositis and, in the more acute phase, bursitis. The symptoms are usually more pronounced early in the morning and may awaken the individual or not trouble him until on arising. The symptoms in this type usually improve on mild exercise. It is usually characterized by ex-

acerbations and remissions. It may produce acute or peri-arthritic changes about a single joint or multiple joints. It may produce acute bursitis, synovitis, or peritendonitis in one or more locations. When chronic it may progress to total infiltration of all structures of the fingers or toes, producing destructive effects in the skin with sinuses and complete infiltration of the ligaments, tendons, synovia, joints and bones.

Prodromal symptoms are not often noticed until some unusual muscular or joint motion occurs. An individual doing his usual work may find he is suddenly incapacitated.

A typical case of this sort, No. L.M. 204, occurred in a longshoreman, age 62. He had been working as a carpenter for many years. Suddenly, while helping to put up the side of a crib, he found he couldn't raise his right arm or use a hammer. This was followed by soreness over the point of the shoulder and pain referred to the front of the elbow. Examination on the following day revealed he was unable to raise his right arm over 45°, with external and internal rotation also being limited 60% by pain and muscle spasm. There was excruciating point tenderness over the subdeltoid bursa. Following an injection of novocain into the bursa there was almost immediate relief of spasm and pain in the shoulder, following which he was able actively to move the arm through a full range of motion. In order to rule out the possibility of an injury of the musculo-tendinous cuff of the shoulder, tests made while the shoulder was painless revealed no evidence of injury of the musculo-tendinous cuff. Blood uric acid was 4.3 mgm% and cholesterol 236 mgm%. He was put on a low caloric, low purin, and low fat diet, and within six days was able to return to work.

He did not return to work because of a shortage of jobs. Ten days later he was awakened at night with pain in the same shoulder. Examination revealed limitation of abduction and rotation. On lowering the arm from shoulder level he noticed pain and there was evidence of a wince and a balk. This symptom has been described as being characteristic of injury of the musculotendinous cuff, however, it was proved immediately after the first episode that there was no such injury of the cuff. A second novocain injection of the bursa resulted in free painless motion and again tests for cuff injury were negative. Another determination of blood uric acid revealed 4.2 mgm%, and of cholesterol 254 mgm%.

It was ascertained that he had not followed his diet strictly. He was then given colchicine, grains 1/120th, every hour for five doses and advised to cease taking it if diarrhea appeared before he had taken all of the medicine. Diarrhea occurred after three doses on one day only. Rapid clinical improvement followed and he was able to return to his regular occupation.

A recent compilation by McCracken, et al, of the anatomical sites of predilection of gouty polyarthritis lists the great toe as being involved in about 70% of the cases, and in their group the percent of cases with tophi in the ears was 72%. In this series there were only five cases, 13%, of involvement of the great toe, in the industrial group; and 13 cases, 25%, in the private group. Only one case had tophi in the ears. Two cases had weeping skin sinuses from which exuded pure crystalline uric acid in one case and in the other amorphous tophaceous material.

There were eight cases of sub-deltoid bursitis, 21%, in the industrial group, and 18 cases, 35%, in the private group. There were eight cases, 21%, involving other bursae—elbow, knee, etc.—in the industrial group, and eight cases, 15%, in the private group. The combined percentage of involvement of bursae in the industrial group of cases was 42%, and 50% in the private group. Involvement of periarticular structures accounted for the remainder, 17 cases, 45%, in the industrial group; 13 cases, 25%, in the private group. The left shoulder was involved in the ratio of 5:3 in the industrial group and the right shoulder was involved in the ratio of 8:6 in the private group; none of the patients treated was left-handed.

X-ray examination has not been particularly helpful since the roentgenologist can report with certainty bone and joint changes compatible with gout in only about one-third of the cases.

LITERATURE on this subject is immense, starting with the discovery of uric acid by Scheele in 1776. Wollaston soon thereafter demonstrated uric acid in tophi. The first biological study centered about leukemia, in which there is often a hyperuricemia. Horbaczewski in 1889 established with certainty the direct relation of uric acid to the nucleins. About that time arguments were raging and the whole subject was in a sorry state.

In 1900, Burian and Schur discovered the endogenous and exogenous origin of urinary purins. Later the synthesis of uric acid by the liver was discovered. His, Jr., in 1900, showed that the acute attack is ushered in by a diminution in the amount of uric acid excreted. This diminution tends to precede the attack by two or three days. Polyuria was noted to have occurred two or three days prior to an acute attack. When the joint symptoms appear the amount of uric acid excreted increases and remains for several days above the average level; then it gradually returns to the average level of excretion.

About this time Emil Fischer elaborated the chemistry of the purin nucleus showing that xanthin, hypoxanthin, adenin, guanin, caffeine, theobromine and theophyllin are all forerunners of uric acid.

Barker in a collective review of all of the literature published prior to 1900 summarized what was known about gout in a series of editorials in the *Journal of the American Medical Association.* He later published the review in a book entitled "Truth and Poetry Concerning Uric Acid." At

the time no one was able to come to any definite conclusion regarding the trigger mechanism of an acute gouty attack, and he concluded with the statement: "After all, it may turn out that disturbances of metabolism, of a nature unguessed as yet by us, may be more important in the pathogenesis of gout than the disturbances of uric-acid metabolism discussed in this review."

Allergenic reactions have been suspected as the trigger mechanism of acute attacks of gout for the past 25 years. Very little conclusive evidence has been produced until recently. One of the earliest writers to suspect a direct relation to the explosive nature of an acute attack of gout was Llewellyn in 1922. Widal, et al, in 1925, called attention to skin reactions to wine in gouty patients. Barber and Oriel, in 1928, found a mobilization of urates in all allergic diseases investigated. Fanton, in 1928, noted eosinophilia in acute attacks of gout. Since then a number of European investigators have published articles on allergy as a trigger mechanism. Weil, et al, in 1924, observed fibrinoid degeneration of the collagen, surrounded by fibroblasts, histiocytes, plasma cells, and granulocytes in the histologic sections of a gouty joint; these were regarded by them as due to allergy.

The recent work of Harkavy, published in 1949, demonstrated that acute attacks of polyarthritis and bursitis could be induced by deliberate subcutaneous injection of pollen extracts and/or by the ingestion of allergenic foods in individuals sensitive to these allergens. He reported three cases in which specific allergenic excitation produced effusion of the ankles, knees, feet, great toes and elbows in a hyperuricemic man, aged 25; attacks were produced in the knee, ankle, elbow and great toe in a hyperuricemic man, aged 45, and in a hyperuricemic woman, aged 41, gouty periarthritic attacks appeared after drinking milk, and during timothy and ragweed season, and after a smallpox vaccination. This suggested to him that the shock tissues of these individuals were located in the articular structures.

In the chronic cases, the irreversible inflammatory changes are the site of precipitation of uric acid and the development of destructive tophaceous lesions. The deposition of uric acid and/or cholesterol precedes the necrotic changes in the granulomatous lesion.

Since hyperuricemia is frequently observed in a number of clinical conditions without gouty arthritis, it is not generally felt that hyperuricemia or abnormalities of the uric acid partition are the provocative factors in the gouty attacks.

In this series of cases, almost all of the industrial group claimed an injury as the precipitating cause. In the 99% who had both trivial and serious injuries, none developed any symptoms of gout.

When an individual during his usual occupational routine finds himself suddenly incapacitated, he can usually recall some unimportant incident upon which to fix the blame for the condition. It is quite common for a layman to rely on the "must have been" diagnosis for his answer to his difficulty. There may be instances when the doctor who first sees the patient can unwittingly fall into the same type of error on trying to arrive at a diagnosis, and informs the patient that he "must have" bumped himself. Detailed questioning in an industrially connected case seldom reveals any admission of prior symptoms of any kind, since these individuals immediately sense the object of the question.

Hench, et al, in 1928 reported that 88% of the doctors who had previously examined and treated the patients in their series of 100 cases of gout, had not recognized gout; and McCracken, et al, in 1946, reported that nearly 50% of the doctors failed to recognize gout as the cause of disability in their series of 100 cases. Since so many diagnoses have been missed in the past, Herrick and Tyson, in 1926 published a paper entitled "Gout—A Forgotten Disease," and McCracken, et al, titled their publication, "Gout: Still a Forgotten Disease."

It is now almost a dictum, quoted by various authors, that a joint, bursa or ligament which becomes acute or sub-acutely painful in the absence of any direct, important injury should be considered gout until proved otherwise.

In order to prevent crippling and disabling conditions, a prompt diagnosis should be made, and if gout is proved, immediate treatment will carry the patient through the acute or sub-acute stage, followed by complete remissions without serious damage. It is desirable whenever possible to determine the specific excitants which precipitate the gouty paroxysm.

Probably the only empirical drug to have retained its reputation over a long period of years is colchicine. This drug is almost specific in the acute attacks. The individual should be placed on a well-regulated regimen consisting of a low caloric, low purin and low fat diet; alcohol, coffee, tea, cocoa, and highly spiced foods should be avoided and an increased intake of water should be urged.

Recently Sachs in an article on hypercholesteremia advised absention from high-cholesterol foods entirely and stated that adequate nutritional substitutes are available in oleomargarine, skim milk, soya-whip topping, and vegetable fat. Artichokes, eggplant and soybean lecithin are reported to be *de*cholesterolizing agents.

Although the title of this paper may appear controversial, it was chosen to present the process of reasoning through which these conclusions have been reached. In short, an acute attack of gout has its inception over a period of days before the acute symptoms are evident. Consequently, gouty bursitis or periarthritis which manifests itself in the course of an individual's usual work should not be considered industrially connected or aggravated.

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Standing Orders for Nurses in Industry
—News, Views, Use and Abuse—

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INDUSTRIAL medical literature is replete with information, opinions and suggestions pertaining to "Standing Orders for Nurses in Industry." It is not the purpose of this discussion to furnish another list of Standing Orders, but to review certain reactions to the procedure as it exists today. For actual guides or patterns see references.[1,2,3,4] For function, purpose and scope, Tabershaw and Hargraves[5] have well covered the subject.

In addition to local observation and discussion, physicians in various capacities in industry have been contacted elsewhere throughout the nation. The following five questions were asked, and 100 replies were returned:

I. "Do physicians in your area issue Standing Orders?"

II. "Is this procedure accepted as being sound by the profession?"

III. "Are you aware of any state, county or any other medical organization endorsing this procedure?"

IV. "Have there been any adverse reactions to this method in your area?"

V. "Do you know of any legal decision that has been handed down on this subject?"

Pertinent facts and opinions were encountered in the replies. The majority indicated interest and a complete understanding of the fundamental purpose and scope of such orders. Constructive criticism based on sound reasoning was notable. A few were unaware that such a procedure existed, and others indicated misunderstanding, confusion and inertia.

TO THE first question 75 replied "Yes"; 15 "No"; and 10 "Unknown." Some of the comments referable to this question were as follows:

1. "Full medical coverage. Standing Orders not necessary."

2. "Where the physician is not at hand, there is little objective to Standing Orders."

3. "No matter the size of industry, they are of considerable value in standardizing treatment of minor conditions."

4. "Whatever the size of industry, they are of considerable value, particularly in smaller plants where the nurse is much alone."

5. "It gives the nurse a source of reference she is in need of."

6. "Our nurses know what we wish done in certain cases when a doctor is not available, and they do carry out things they know we would want done, but these cases are always seen by a doctor."

7. "Such orders are used throughout the country but not nearly to the extent they should be."

8. "Not familiar with and have not read Standing Orders."

Here is diversity of opinion. In one instance, it is indicated that Standing Orders are not essential or desirable when there is full medical coverage. On the other hand it is stated that no purpose is served unless there is full medical coverage. "Verbal Standing Orders" substitute for written Standing Orders in many medical departments. What harm would there be in placing these "understood procedures" in writing? This would be of particular value to the younger nurse and serve as a constant reminder to the more experienced. It would further result in standardizing management of all types of industrial problems and procedures.

Some references are:

National Industrial Conference Board, 1948[7]: Standing Orders are prepared in 174, or 52%, of 333 establishments. Whitlock-Kahl-Trasko.[8]

Nationwide Survey, 1942: 36 states, 3,027 nurses, 868 establishments, 2,400,000 workers, Standing Orders 36%. They further state "The lack of Standing Orders in nursing practices in industry should no longer be a problem."

Findings of Committee to Study Professional Status of Industrial Nurses[9]: 24 states reported that nurses working under Standing Orders in 1,234 plants, while 16 states reported lack of Standing Orders in 248 plants.

IS THIS procedure accepted as being sound by the profession? (Question II) "Yes" 68; "No" 11; "Unknown" 21. Answers to this question throw further light on the problem. Of interest are these replies:

1. "In the beginning there was some criticism of these Standing Orders from the profession regarding the encroachment by nurses upon the field of medicine. In recent years, however, this criticism has dissipated and we have had no difficulty with the physician regarding nursing procedures."

2. "The physicians, even though dissatisfied with some of the emergency nursing services, have not apparently sufficiently understood the place or scope of Standing Orders."

3. "There has been a diversity of opinion and nothing has been done other than to recommend that general instructions for handling the injured and sick be given to all attendants of the medical division."

4. "Some approve and some do not, but no one that I know objects to Standing Orders prepared by the 'Council on Industrial Health, A.M.A.'"

5. "I think some doctors have a reasonable question if county medical society approval of such orders might not be construed as granting

President's Address, presented at the Eighth Annual Meeting, WESTERN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, Los Angeles, May 7, 1949.

nurses considerably more authority than is legally theirs."

These disclose an element of criticism, suspicion and misunderstanding. Adequate supervision and control should eliminate any apprehension or mistrust. The position of the nurse is to supplement rather than to supplant the doctor. It is a growing practice and properly so for companies having a medical department to encourage employees to visit the department for all injuries or ailments, no matter how trivial. In fact these very minor problems account for the greater number of cases reporting for care or advice. With the very minor injury, the employees would not take time out if they had to do so much as cross the street to be treated by a physician. They would "treat" themselves, and only the unfortunate ones who developed sequelae would be heard from further and, under these circumstances, the percentage would be high. For cases not in this group, it is the nurse's function to render first aid and refer for proper medical care with the greatest dispatch. Properly prepared Standing Orders will delineate limitations and be a factor in standardizing procedure industry wide.

IN ANSWER to medical society or organization endorsement (Question III) the replies were "Yes" 46; "No" 54. Replies to this question advise of some of the organizations which have taken favorable action on this subject. There were in some instances, statements to the effect that no action was taken, but in none of these communications was there any information to the effect that any medical organization had officially rejected this procedure as unsound. The following are some of the replies to this question, and it is certain that this does not cover all instances of favorable action in this country:

1. "House of Delegates of the Minnesota State Medical Association several years ago, upon recommendation of Committee on Industrial Health."

2. "Endorsed by New Jersey Association of Industrial Physicians and Surgeons."

3. "Approved by Buffalo, New York, local Compensation Committee."

4. "Endorsed by Committee on Industrial Medicine, New York Medical Society."

5. "New York State Workmen's Compensation Law requires that where nurses are working without doctors present, they must work under Standing Orders provided by an attending physician and such orders must be posted."

6. "Requested by: Hamilton County Medical Society (Ohio); Ohio State Medical Association."

7. "Industrial Relations Committee of Oregon State Medical Society approved a guide issued by A.M.A. for drawing up individual Standing Orders applicable for any given plant."

8. "Approved by Rhode Island Society of Industrial Physicians and Surgeons."

9. "Washington State, Department of Health, Industrial Section, promotes issuance of written Standing Orders for Nurses in Industry from a specific physician."

10. "West Virginia, State Department of Health, Bureau of Industrial Hygiene. Booklet has been received and recommended by West Virginia State Medical Association to be used as a guide."

11. "Favored and encouraged by State of Wisconsin Medical Society. Medical Society Booklet (Industrial Health). Intended as a guide for Medical Director to use as general instructions."

12. "Effort on part of Connecticut State Bureau of Industrial Hygiene to encourage use of Standing Orders."

13. "Industrial Hygiene Division, U.S.P.H.S., has advocated use of Standing Orders for Nurses in Industry for some years and most of the state industrial hygiene units advocate the establishment of such orders."

14. "Recommended by Medical Society of Indiana State and County."

15. "The Medical Committee of the American Iron and Steel Industry does endorse this procedure."

Ten physicians were unaware of the action by the Council on Industrial Health, A.M.A., and the Division of Medical Service in Industry, A.C.S. Furthermore, although engaged in industry, they were not familiar with action taken by their own local society.

REPLIES to Question IV indicated local unfavorable reaction in eight instances, while the remaining 92 advised either of local recognition of this procedure or of being unaware of any local opinion one way or the other. The following answers typify the unfavorable comment:

1. "There has been a little reaction here but this has been due to the failure of the nursing staff in carrying out orders as specified."

2. "In fact few industrial nurses are working in this state and more or less independent of medical supervision."

3. "Physicians here do not issue Standing Orders because there is a tendency on the part of the nursing profession to presume, and assume unnecessarily prerogatives of the physician." "In some instances, nurses have influenced employees to select, when sick, certain physicians as against their own family doctor." "In recent years some of the nursing profession have been independent, arrogant, and presumptuous."

4. "There has been a tendency to take more authority and assume more responsibility than their qualifications warranted."

5. "Safety engineers and employers who are anxious to cut down on their medical bills, permit, without the doctor's permission, nurses to give antitoxin and frequently catarrhal vaccine."

6. "Until medical societies make a more concerted effort to develop or exhibit interest in the conduct of individual nurses, and are willing formally and officially to guide them in their actual conduct of cases, nurses will continue to exceed their professional authority."

7. "In general the industrial plants in this county have only one or two nurses given charge of the Medical Department, and a physician rarely or never visits the industrial plant. No one is consulted concerning any industrial program."

8. "It is my hope that neither your state nor your medical profession will grant nurses unrestricted privileges in regard to medical and surgical procedures."

Where there is smoke there must be fire, and we must attempt to determine the facts upon which this criticism is based. In general, to all intents and purposes, criticism and unfavorable reaction are directed toward improper organization, guidance and understanding.

During the stress, strain and shortage of war time, it was necessary to do our best with what we had. Nurses necessarily were often working under wholly inadequate supervision and guidance. Although there may be some residual "holdover," this is no longer necessary. It is inexcusable, and should not be countenanced. This, as noted above, is evidence of existing organization, management and procedures contrary to all that we have attempted to teach. Certainly an organization of sufficient stature to employ a nurse can well afford proper medical direction, even though this be on a limited part-time basis, or, more adequately stated, industry cannot afford to maintain any medical or industrial health department without proper and sufficient medical direction. It is axiomatic that the very existence of a medical service in industry must depend upon adequate medical supervision. In the final analysis, the doctor should assume responsibility for the actions of the nurse and should be held to answer if he permits improper procedures to go unchallenged.

In 1942 Leggo[10] suggested that "each management, each insurance carrier, each physician, in any way connected with the plant, ascertain what first aid equipment is available at the plant, who is rendering first aid care, and whether they are subjecting themselves or employees to unjustified risks through inadequately supervised service."

The majority of physicians contacted expressed opinions that this procedure was desirable and essential. Their convictions pertaining to function, purpose and scope were quite steadfast. Of interest are further comments favoring Standing Orders:

1. "In our plant we have used Standing Orders prepared by the A.M.A. as a guide for our nursing staff, particularly for those who are new in industrial work."

2. "It is my opinion that written Standing Orders' main value lies in their educational and directional precept."

3. "It would take an exceptional long-standing doctor-nurse relationship to preclude the value of written limitations in the scope of nurses' work."

4. "In general I am in favor of Standing Orders but feel that to be effective, they involve medical society participation."

5. "Where this procedure is not practiced by industrial physicians in this locality in particular, I believe it is due to laxity or inertia of the physician in not getting orders written as they all agree should be done."

The most outstanding constant in these communications was frequent reiteration of the fact that, in the final analysis, the physician is solely responsible for what transpires in his medical department, particularly as to nursing procedures. If there is a crux to this problem, this is it, and it is exemplified by the following statements:

1. "It is reasonable to feel that the directing physician would still be responsible for any negligence or unfortunate result of nurse's treatment, provided she followed explicit Standing Orders. Issuance of Standing Orders does not relieve the doctor of any responsibility but certainly minimizes disaster and sequelae."

2. "It must not be the purpose of Standing Orders to enable nurses to render care that should be done by physicians or to eliminate close supervision of their work."

3. "My personal opinion regarding Standing Orders is that it is the responsibility of the physician or physicians who issue these orders, and further it is his or their responsibility to continuously investigate the medical establishment, to make certain that these orders are followed and are not slowly broadened by circumstances arising out of industry without consent."

4. "In this area, only the physicians responsible for medical care in the particular industry issue Standing Orders."

5. "We have followed the practice of physicians assuming full responsibility for action of nurses when following written Standing Orders."

The value of written Standing Orders as warnings against the nurse practicing medicine, and serving as a guide and advice as to limitations, is covered in the following replies:

1. "They limit the nurse in what she may do to those things which the profession considers necessary and adequate for emergency treatment of patients, and prevent her from doing things that might be harmful to the patient."

2. "This is especially true in instances where the nurse is operating in a Medical Department which is not covered by a physician, all or part of the time. The purpose in this instance is primarily to delineate the limitations. They should not only be formulated and signed by the physician in charge but they should also be enforced."

TO ISSUE written Standing Orders, it is necessary to preface them with an introduction and general discussion, in order that nurse's duties, responsibilities, and limitations be made clear. They should further serve as a guide for management of various contingencies that may arise. Though all this is well covered in various publications, the following is again suggested:

'These orders should be in your possession at

all times. They are to direct and guide you as to procedure in the event of injury or emergency, including acute illness, or any acute physical or emotional problem that comes or is brought to you for first aid or advice. Any written list of Standing Orders, no matter how exhaustive, would not include advice to cover every situation that may arise. There are occasional cases that require immediate individual judgment and action. On occasion it may be necessary for you to proceed with some type of action not covered by these instructions which are to follow. In the vast majority of cases, however, you should follow these Standing Orders to the letter. Rapid work is often essential but is disastrous unless guided by cool thought and a well-founded background of knowing what you are doing.

'In cases of serious nature, call the doctor as soon as possible. Take time, however, to accomplish the following first:

1. Complete emergency procedures where seconds or minutes count.
2. Analyze the injury or illness to the best of your ability. The more factual information you are able to relay to the doctor, the more adequate will be his advice as to immediate further procedure to follow.
3. Do no more than is needed and refrain from doing anything that might be construed as practicing medicine.

'Cases that should be referred to the doctor fall in general under three classifications:

1. The more serious cases which require immediate attention.
2. Those of a less serious nature which obviously require the services of a physician, but the time element as far as minutes or even hours is concerned, is not an important factor.
3. The borderline case, or case where there is an element of doubt should be referred for medical opinion.

'The following is to assist you in making the decision. Refer all of the following for medical advice:

'ACCIDENT CASES: All cases other than those that are very minor in character, which immediately and favorably respond to emergency and simple follow-up measures.

'Even all very minor cases where there is an initial or subsequent element of doubt.

'All cases in which the injured employee expresses the desire to see the doctor. This is very necessary even though you feel the problem is trivial.

'Any case in which there is or appears to be, or which has the potentiality of, controversy.

'OCCUPATIONAL INJURIES: What has been said in respect of accidental injuries holds true for occupational injuries. All ailments or subjective complaints which are felt by you or the employee to be possibly occupational in origin, should be referred to the doctor for examination, diagnosis and treatment indicated. The only exceptions are those cases which are trivial, very temporary and not recurrent. There is no clean line of demarcation between the very minor, trivial, controversial and the more serious case. This is a matter of keen observation and judgment by you, this judgment being based on your training, experience, and ability to evaluate each case as it arises. Remember it is safer to be cautious than to assume more responsibility than you are capable of or are expected to undertake.

'Records, even though some of them may be brief, must be kept covering all initial and subsequent visits. There must be no exception to this rule no matter what the circumstances or how apparently trivial the problem in question appears to be.

'Use great care in referring ill employees to outside physicians. It is first necessary to determine if he or she has a family physician and, if such is the case, advise this individual to contact this physician. This holds true even though you feel the service of a specialist is in order. In this case, you should assume that the family physician will proceed with the referral. Refer cases to other physicians only where there is no family physician or cases in which the employee insists. In such event, the facts should be recorded.

'The foregoing is to be followed by the more specific instructions covering first aid and management of various specific problems, traumatic cases, occupational and non-occupational illness.'

IN RESPECT of legal decision (Question V), there were no replies in the affirmative. There is a paucity of legal opinion on this subject and all involved must consider legal implications. "The concept of legal liability of the nurse is a natural outgrowth of the modern philosophy of the protection of human rights, which is a social development of tremendous importance. Inherent in this philosophy is the belief that society must protect the individual when he suffers injury at the hands of another."[6] The letter, the spirit, and local interpretation of the law must govern our daily conduct. Special occasions or circumstances may arise where it would be difficult or impossible to adhere to the letter of the law and still remain within keeping of its spirit and objective. A man is writhing in pain from an extensive burn and a physician is not immediately available, the nurse administers an analgesic or sedative, and in so doing there is committed an infraction of the letter of the law in two of its phases. First, she is making a diagnosis and, second, she is initiating treatment. Such action should not be interpreted as being in conflict with the spirit, meaning, and intent of the law.

An editorial in *J.A.M.A.*[11] recommends that if physicians will not issue Standing Orders, local medical societies should .... "To help the nurse out of her quandary, committees on industrial health in state medical societies should adopt standing orders for use by nurses in industrial dispensaries with the understanding that these will operate unless replaced by specific orders prepared by the physician in charge. Only in

this way can the chain of responsibility and continuity of professional relations, which have existed so successfully in other forms of community medical service be satisfactorily maintained in industry."

The A.M.A. Council on Industrial Health says:

1. "Standing Orders cannot be written to meet every situation likely to arise in industry. They must be modified to meet specific requirements as in accordance with the training and professional competence of assisting personnel."

There is general agreement on this important point, as is evidenced by the following opinions:

1. "These orders should be scrutinized at intervals by the attending physician, and the method carried out should be surveyed regularly."

2. "A.M.A. in some cases needs to be modified to meet the local situation and the community pattern of medical practice."

3. "I feel that any blanket Standing Orders for nurses in various industrial positions, would be difficult and impractical. I think that every industry, no matter how small, which employs a nurse should have an industrial physician to whom that nurse can turn for advice, and he alone should issue Standing Orders in accordance with the type of exigencies which are apt to arise in the particular industry."

Any medical society can go no farther than endorse in principle the procedure of Standing Orders and must necessarily adhere to the dictate that in the final analysis the physician is responsible. Standing Orders such as those prepared by the Council on Industrial Health, A.M.A., serve only as a guide for a physician formulating his own orders for the nurse or nurses in a plant or plants where he has the complete responsibility of directing the medical service. Casual telephone calls or occasional visits with the nurse are not enough. The doctor must know his nurses, their ability, and their stature of service, as well as the materials and equipment available. He must know the plant, and this is only accomplished by periodic routine inspections. He must be familiar with the plant environment, its mechanical and occupational hazards. That there should be no dispute regarding the necessity of this is illustrated by the following opinions:

1. "The question of Standing Orders for Nurses in Industry is one that has plagued industrial physicians on many occasions. Personally I believe it revolves entirely around how much contact the directing physician has with a particular industrial dispensary."

2. "He should be aware of medical facilities available in the plant and know something about the nurse's capabilities. The greatest danger would be some vague (or telephone) acquaintance by the doctor and the medical department involved."

3. "The only sound method of practicing industrial medicine is the practice of each physician writing his own orders in his own particular dispensary, the orders being signed by him."

As previously indicated, it would be a paradox for a nurse to be employed in an industry which had no need or did not realize the necessity of adequate and proper medical direction. Under such circumstances, I would be reluctant to advise a nurse to accept an assignment with responsibility which is not rightfully hers.

Adequate and complete medical supervision does not imply that a nurse's activities should be unduly curtailed. She has had a special training and has ability to perform a useful service. Not to take advantage of this fact and not to sanction reasonable flexibility would not be sound, profitable, or to the best interest of those whom she serves. Tabershaw and Hargraves[5] state, "The type of Standing Orders that insist that everything be referred to the doctor does not represent their true function." Within these communications, opinions as stated below further sustain this contention:

1. "The physicians in industry cannot watch every movement a nurse makes, nor would they want to. This is particularly true with a part-time physician."

2. "I do not think that such orders should be too rigid, and latitude should be allowed for application of common sense in any given injury."

3. "In cases not seen by a physician, the nurse can be expected to do no more than a first aider but at a higher level of technical performance in what she does do in proportion to her greater training, experience and skill."

We must further take into account the trend of the times. During the more recent years, the status of the nurse has advanced to her actual recognition as a professional person. She, in turn, must accept the responsibility that this entails. As stated, the physician is primarily responsible for what transpires within a medical department under his direction. The nurse, however, is not immune to legal action and must conduct all of her activities with this in mind, ever remembering that the scope of her endeavors with their limitations is well defined.

SUMMARY: Call them what you will, Standing Orders, Nurses' Guides, Nursing Procedures, or General Instructions, some type of well formulated written guide to fit specific plant requirements is essential to the best interest of the employee, the management, the nurse and the physician. Adequately and properly to accomplish this, there must be a physician in charge who is familiar with all hazards, mechanical and occupational, as well as the stature and qualifications of all personnel under his direction. Then and only then is he in a position to furnish a written guide, tailored to fit the requirements of a given plant. It is necessary that all concerned understand the purpose, scope, restrictions, and limitations of this procedure. This includes management, the nurse, the industrial physician in charge and the medical profession as a whole. The use of Standing Orders must reflect adequate medical supervision. Anything

short of this may result in continued criticism, unfavorable reaction, legal action, and failure.

Standing Orders should not involve definitive therapeutic instructions but rather directions covering emergency first aid procedures and palliative measures which afford symptomatic relief in emergencies, there being no intention to supplant the physician but rather to supplement him. They serve to delineate the nurse's scope of endeavor and to standardize procedures. The industrial nurse's training, experience, available material with which to work, and continuous physician contact, permit a broader range of action than the simple first aid measures practiced by the layman. To curtail her activities would not be to the best interests of those whom she serves.

CONCLUSION: On the basis of the foregoing I would encourage this organization and other medical societies to go on record as favoring in principle the procedure of Standing Orders for Nurses in Industry.

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The Psychosomatic Approach in Industry

MEDICINE is at the present time well along in the development of a new concept which I believe we may in the future consider a basic part of the industrial relations department of industry. This concept is in the field of neurophysiology and has to do with the emotional factor of the employees. We know that pain is a sensation which originates from two sources: first, from the sensory nerve, such sensations as we would experience from a burned eye or a sprained ankle; and second, an influence on the interpretation of that pain sensation by the activity of the memory and reasoning division of the brain. The neurophysiologists have proved that both the pain sensation from the body and the emotional discharge from the brain are poured into the same general receiving station or, as they call it, the "internunciary pool." To explain this complex mechanism—here we have an employee who currently is experiencing a high degree of emotional instability due to family and financial worries. These problems are causing what we may term a distinct emotional trauma. Now we add an injury to the eye which is as a usual thing, minor, but moderately painful. He also now develops a fear of the consequences of this injury, adding another emotional trauma. As a result he does not react in the usual pattern but has intense pain and complains bitterly of his condition. In the past we have said that this man has a low pain threshold, or even that he is a sissy. Such is not the case. What we do have is two definite injuries, and an alleviation of either will result in benefit to both, or better yet, prevention of emotional trauma will aid in case of physical trauma and may even be a factor in the prevention of physical trauma. To operate this concept on a practical basis we should then make our industrial relations department (and well-trained personnel is, of course, a necessity) a father-adviser to the employee group. This should be a department where even marital difficulties can be confidentially discussed and sound advice given. On the other hand, the medical staff must be educated to this concept and great care taken not to add emotional trauma to physical trauma by ill-chosen conversation or statements pertaining to the injury. This plan is being used to a considerable extent at the South Charleston plant of Carbide and Carbon Chemicals Corporation, not as an outgrowth of this concept, but as a policy of good will on the part of the company. Certainly, we will be able to improve it materially in the future.

—From "The Ophthalmologist's Contribution to Industry," by RALPH S. MCLAUGHLIN, M.D., in *The Sight-Saving Review*, 19:2, Summer, 1949.

Sickness Disability Insurance Laws in Relation to Occupational Medicine

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AMONG the factors which have influenced the development of occupational medicine, legislation is certainly one of the most important. The far-reaching effects of labor laws and factory codes are often forgotten in these days when it is taken for granted that reasonably safe and healthful working conditions will be provided. Child labor, a major problem in this country a hundred years ago, has ceased to be a matter of great concern, and abuses of the apprentice system, of home-workers and the employment of women in hazardous jobs have been pretty well eliminated, all as a result of legislation. A decent place to work, and a decent wage, have become synonymous with the American way of life, and these two factors have resulted in raising the level of health of the population.

In the early days of the Twentieth Century, industrial accidents constituted a large and growing cause of death and disability Legislation, in the form of workmen's compensation laws, resulted in a reversal of this trend starting about 1910, and the curves of industrial accident frequency and severity have continued downward to the present time.

Interest in the prevention of occupational diseases was stimulated by two kinds of legislation: first, the inclusion of these diseases under workmen's compensation coverage, and second, the expansion of industrial hygiene services made possible by the Social Security Act of 1935.

Unemployment, with resulting loss of wages, may be due to any one of three causes: (1) disability from causes arising out of the job; (2) lack of employment opportunities; and (3) disability due to causes unrelated to the job. Existing legislation provides a measure of protection to workers who are unemployed for the first two of the above-mentioned causes, through workmen's compensation and unemployment insurance, respectively.

Until very recently, however, there had been no legislative act which would provide any benefits to individuals who were unemployed because of disabilities of non-occupational origin.

In 1942, Rhode Island became the first state to enact a law providing for compulsory cash sickness insurance. California followed in 1946, New Jersey, in 1948, and New York and Washington in 1949. At least a dozen additional states are considering legislation of this type, suggesting that within the next decade a majority of the states will have adopted some form of cash sickness program. While the laws already passed and under consideration differ in many details as to financing, administration and benefits, they all have the same basic purpose, namely, to provide cash benefits to those who are unemployed because of non-occupational disability. A summary of some of the salient features of the five laws already passed is given in the accompanying table.

The growth and spread of this new form of social insurance naturally raises the question of possible effects on the development and practice of occupational medicine. An examination of past history and present trends may throw some light on what may be expected.

EXPERIENCE RATING AND INSURANCE COSTS: It is well known that employers may effect substantial savings in workmen's compensation insurance premiums by reducing the frequency and severity of occupational injuries. Many voluntary cash sickness insurance programs provide for reduced premiums following a period of favorable experience in regard to sickness claims. The laws recently passed in New Jersey and New York limit employee payments to a fixed amount, regardless of claims experience. The New Jersey law, however, specifically mentions that employer contributions will be calculated according to the experience rating after July 1, 1951, and the New York law holds the employer responsible for any costs in excess of those covered by employee contributions. It would seem obvious that employers will wish to keep their premium payments at a minimum and consequently must take added interest in the health of their employees. A well-developed industrial health program, with proper emphasis on the prevention of all types of sickness disability now appears to be more important than ever before.

PHYSICAL STANDARDS FOR EMPLOYMENT: In spite of the propaganda campaigns which are being carried on by rehabilitation agencies, most employers prefer to hire physically sound rather than handicapped persons. One reason for this has been the fear, not borne out by experience, that handicapped workers might be the cause of increased compensation insurance costs. Many states have enacted "second injury" laws in an effort to reduce the resistance to the employment of the handicapped. If employers are to be liable for increased sickness disability insurance premiums in the event that sickness absenteeism becomes excessive, there will surely be a tendency to select for employment those who may be expected to have the least amount of sickness. More rigid physical standards may be expected, with preference being shown for the young, white, male applicant. It may be that in time something akin to the "second injury" laws will

SALIENT FEATURES OF FIVE SICKNESS DISABILITY LAWS

	Rhode Island	California	New Jersey	Washington	New York
Year Adopted	1942	1946	1948	1949	1949
Administrative Agency	Unemployment Compensation Commission	Same	Same	Same	Workmen's Compensation Board
Type of Fund	Monopolistic State Fund	State or Private Plan	Same	Same	Same
Coverage	Same as for Unemployment Insur.	Same	Same	Same	Same
Amount of Benefits per week	$6.75 - 18.00	$10.00 - 25.00	$9.00 - 22.00	$10.00 - 25.00	$10.00 - 26.00
Benefit Period (maximum)	20¼ weeks	26 weeks	26 weeks	26 weeks	13 weeks
Waiting Period	1 week	1 week	1 week	1 week	1 week
Employee Contribution	1% of wages up to $3,000 year	Same	¾% of wages up to $3,000 year	1% of wages up to $3,000 year	½% of wages but not more than 30c per week
Employer Contribution	None	None, unless under private plan	¼% of payroll, plus added cost if under private plan	None, unless under private plan	Any cost not covered by employee contrib.

have to be added to the sickness disability laws to facilitate the employment of those who are not physically perfect and the retention in employment of those who have passed middle age.

ABSENTEEISM: As just pointed out, excessive sickness absenteeism in states having cash sickness programs may result in liabilities to the employer in addition to those caused by slowing of production, interrupted work schedules and the like. In spite of the fact that all current programs call for a waiting period of one week, i.e., no benefits for any illness of one week's duration or less, the availability of benefits for longer absences may influence some employees to make a minimum of effort to return to their jobs following a period of illness. This, of course, is most likely to occur when there is a small differential between the regular wage and the amount paid in sickness benefits. Absentee trends are notoriously difficult to evaluate, but there is some evidence of an increase of absenteeism in Rhode Island which may be related to the availability of cash sickness benefits. In any event, the effect of the new programs on sickness absenteeism must be closely watched by the industrial physician.

CERTIFICATION OF DISABILITY: The problem of certification of disability is a knotty one in any cash sickness disability program, whether it be voluntary or compulsory. Every industrial physician has at some time been faced with the necessity of evaluating disability certificates brought in by employees who have been away from work. The family physician cannot be considered unscrupulous if his opinion is colored by his personal interest in his patient, but the reasonableness of certifying a period of sickness disability may not always be apparent to the industrial physician. The latter is naturally interested in reducing sickness absenteeism to a minimum and may at times find himself at odds with some of the practicing physicians in his community. There is no solution to this problem except a continuing program to promote mutual respect and understanding between the industrial physician and the private practioner. In time, it may become necessary to set up impartial medical panels to pass judgment in cases involving differences of opinion as to the duration of disability.

DISPUTED CLAIMS: In addition to controversy over the reasonable duration of a period of disability, and over the actual existence of disability, there may be a question as to whether an illness is of occupational or non-occupational origin. This is a matter of considerable concern to the patient, to his physician and to the employer or his insurance carrier. Sickness disability benefits are strictly limited in amount and duration, and include no payment of medical costs, consequently it is to the advantage of patient and physician to have an illness adjudged as occupational. It may be anticipated that a certain number of claims will be shunted back and forth between the unemployment compensation commission and the workmen's compensation board while the sick man waits for his benefits. Provisions have been made in the New York law which will obviate this difficulty. Handling of disputes of this type may prove to be another task for an impartial panel.

PSYCHOLOGICAL EFFECTS: The industrial physician may well ponder the psychological reactions of an individual who has been the recipient of cash benefits during a period of illness. The benefits may have amounted to $25.00 or may have been seven or eight dollars a week. They may have been received during the entire period of disability or they may have been exhausted before the patient had recovered his health. A substantial part of the payments may have been used in securing medical care. Will the employee be grateful for having received at least *some* income during the illness or will he be resentful

that the benefits were not greater? Will the limited income force a man or woman back to the job before convalescence is complete or will the cash payments make possible a prolonged period of absence? Will employees in general resent further inroads into their "take-home" pay? Undoubtedly employees will react in a variety of ways, depending largely on how their thinking has been conditioned. Since a number of influential labor unions have already indicated their dissatisfaction with the limited benefits and with the limited contributions made by the employer, a certain amount of unfavorable employee reaction may be anticipated. Whether or not this will lead to accident proneness, or have other undesirable consequences can be determined by careful observation on the part of the industrial physician.

STATE VS. VOLUNTARY PLANS: Of the five states which have thus far enacted sickness disability laws, all except Rhode Island permit optional voluntary plans if the employees consent and if the benefits equal or exceed those guaranteed by the state plan. Presumably optional voluntary plans will be permitted in other states as they enact their laws. The industrial physician should be sufficiently familiar with both compulsory and voluntary plans to be able to point out to the employer the advantages and disadvantages of both types. In this way he can be helpful in securing maximum benefits per premium dollar and also guide in the selection of a plan best suited to the needs of his particular plant.

There is little doubt that as additional states enact sickness disability laws and as experience in their operation is extended, additional problems will arise to command the attention of the industrial physician. The basic purpose of all social legislation is to improve the general welfare of those who are covered by the law. The potentialities for improving the health of employed persons created by sickness disability laws may prove to be equal to or greater than those resulting from workmen's compensation legislation. It is the duty of the industrial physician to see that full advantage is taken of these potentialities.

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"Please, Doctor"

FREQUENTLY the profession is approached by individuals requesting "slips" from the family doctor. The slip is to indicate to the patient's employer that "he needs lighter work," "she is in need of a rest or leave of absence," or "the bearer may return to work but is not to be asked to lift any great weight, stand for any period of time, or be required to walk." There are certain persons who have been ill or have conditions that require special consideration. If they are under a physician's care and proper study has been made and diagnosis determined, a communication to the employer is helpful to all concerned, but please send this information to the employer. Do not give it to the employee. If there is a physician employed by the company, call him on the phone and talk it over with him. Honest cooperation between the family physician and industrial organizations can exist. Frequent and repeated written requests for forms for individuals harm the employee and put the M.D. in a questionable position. Make your communications as intelligent as you would your presentation of the matter to a professional colleague. Be sure they are necessary and 100% true. Don't submit a diagnosis of "nervous condition," "run down," "needs change of job," "anemic," etc. You cannot so label your diagnosis on your hospital chart. Let's not insult the industrial firm by implying that it is credulous enough to accept such statements.

—*The Stethoscope*, Erie County Medical Society, May, 1949; quoted in *Pennsylvania Med. J.*, September, 1949.

A Walking Blood Bank

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FOR MANY years at the Owensboro Tube Works of the General Electric Company, it has been the custom that the co-workers of a sick employee needing a blood transfusion volunteered their blood in order to speed his recovery or perhaps to save his life. This humanitarian impulse was prompted solely by a desire to help a fellow employee.

When a sick or injured employee needed a blood transfusion, the word soon spread about, and many workers in his section volunteered to donate blood. None knew, of course, whether his type was the same as was required, so, as a result, as many as 10 or 15 people were sometime sent to the hospital to be typed before one was found with the same type as needed. This was often further complicated by a demand for the correct Rh factor. One can easily see how many people would likely have to be typed if a call were made, say for a type I, Rh negative blood, which is a very rare combination. Thus, much time was usually wasted on the part of the prospective donors, as well as the laboratory technician, and the company lost a great deal of production. Last and most important, was that the patient needing blood in a hurry, was necessarily prevented from getting it quickly.

To eliminate this sort of lost time and loss of production, it was decided by our Works Manager to broach a plan of blood typing for the entire personnel of the Owensboro Tube Works. This project was to be sponsored by the Dar-Nek Club, a local organization of foremen and engineers. The members of this club did a great job of "selling" the plan to the entire personnel. Posters were put up all over the plant, and each foreman gave a short informal talk to his workers, stressing the advantages of knowing to which blood group an individual belonged. Each foreman in each section took the names of those who wished to volunteer to have their blood typed.

The fact that there was such an enthusiastic response to this call for volunteers, was indicative that each volunteer at least tacitly agreed to be, at some future date, a prospective blood donor for a friend or relative. In turn, each volunteer automatically became a prospect or potential candidate for the receiving end of our "walking blood bank." Meanwhile, organization plans went forward to take blood samples. The services of a laboratory technician were secured, and the medical section organized the work in such a manner that there would be a minimum of confusion and the blood samples could be taken and typed as rapidly as possible. A minimum of time was lost by each volunteer, and thus lost production was practically non-existent.

ABOUT 85% of the employees of the Owensboro Tube Works are women. The great majority of them are married and in the child-bearing age. The Rh factor is assuming more and more importance in the medical field, and more specifically in the obstetrical field. Most of our obstetricians here in Owensboro are insisting that this Rh factor be determined in the father, and *before delivery* in the mother. Many accidents of pregnancy and unfortunate incidents to the new born are prevented by having this information beforehand. Thus, it was decided by the Works Physician to include this Rh factor as well as the Kahn test in each volunteer for blood typing.

The tests were done by section. Each general foreman of the section was given a typewritten list of his employees who were to be typed. He designated someone in his section to send the Medical Section four employees every 10 minutes. He arranged this schedule so that a minimum of time and production was lost.

The secretary of the Medical Section filled out the registration card on each person and also the Kahn submission slip, shown as Fig. 1.

Name _____ Clock No. _____

Address _____ Date _____

Address _____

Blood Type _____ R. H. Factor _____

Dates of Blood Donation _____

Remarks: _____

Fig. 1.

She gave both of these cards to the applicant and sent him to the Works Physician to have a blood sample taken. Five cc. of blood were drawn from each patient by means of a B-D vacutainer tube and needle, the Works Physician being assisted by the nurse. A great deal of time was saved by using these vacutainers. They saved the nurse's time by not having to clean, sterilize and dry syringes, since only the vacutainer needles had to be sterilized. Another big time-saving advantage in using vacutainers is that there is seldom a report of a hemolized Kahn specimen returned from the laboratory.

After the blood was drawn, three large drops were expressed from the needle to a glass slide and handed to the technician, together with the registration slip to the applicant. The technician ran the blood type and Rh factor and recorded them on the registration slip. The remainder of the blood was labeled and sent to the State Laboratory for a Kahn test.

About a week after the blood had been typed and the Kahn report had been received, the prospective blood donor was given a card, shown as Fig. 2, giving his blood type and Rh factor. This card should be carried by the employee at all times.

GE EMPLOYEE BLOOD TYPE CARD

NAME

ADDRESS

PHONE

BLOOD TYPE: OR

RH FACTOR: NEG. POSITIVE

SPONSORED BY DAR-NEK CLUB
OWENSBORO TUBE WORKS

DATE OF LAST DONATION:

IN CASE OF EMERGENCY NOTIFY:

PHONE

Fig. 2.

Several heretofore undiscovered cases of syphilis were turned up by doing routine Kahn tests. These people were interviewed by the Works Physician and placed under treatment with their family physician. They were also advised never to give blood for a transfusion.

Thus, in this manner, section-by-section throughout the entire plant, 1272 volunteers were typed, and their Rh factor found. This number of our own employees forms our "Walking Blood Bank," who are always ready and willing at a moment's notice to give blood for a sick friend or relative.

The registration cards bearing the name, address, clock number, type and Rh factor were filed in the Medical Section. For each section, they were filed alphabetically by type and Rh factor. Thus, when a call is received from a fellow employee or close relative, the Works Physician can find prospective donors from the same section, knowing in advance that the one or ones sent to give assistance have the proper blood type and Rh factor.

In November and December, 1948, when this blood typing project was started and finished, the Owensboro Tube Works had 3080 employees. Of this number, 2629 were females and 451 were males. The fact that 41% of our employees volunteered to have their blood typed, makes our "Walking Blood Bank" more valuable. Each type and each factor of each type is well represented. Even the rarer types with Type I, Rh negative and Type III, Rh negative, are relatively well represented in our bank.

The Rh factor is a normal variation in the serologic composition of red blood cells, analogous to the four blood groups or to other physiological variations, such as differences in the color of the eyes or the hair.

The Rh factor further subdivided each group into 85% Rh positive and 15% Rh negative as shown in Fig. 3. Our group closely approximated these figures, 85.8% having the Rh factor, and 14.2% being without it.

The blood-bank of the Owensboro Tube Works follows closely the group and sub-groups of the general white population as shown in Fig. 3.

SUBDIVISION OF BLOOD GROUPS AS TO RH+ AND RH— FACTORS IN WHITE RACE

Blood Group	1		2		3		4	
Incidence in White Race	4%		41%		10%		45%	
	RH+	RH—	RH+	RH—	RH+	RH—	RH+	RH—
	3.4	0.6	35.	6.	8.5	1.5	38.	7.

Fig. 3.

FEMALE DISTRIBUTION
BLOOD TYPES AND RH FACTORS

Blood Group	1		2		3		4	
Incidence Owensboro Tube Works	42		493		97		490	
	3.74%		43.9%		8.6%		43.67%	
	RH+	RH—	RH+	RH—	RH+	RH—	RH+	RH—
	3.03	.7	38.5	5.4	7.3	1.3	36.7	6.95

Fig. 4.

MALE DISTRIBUTION
BLOOD TYPES AND RH FACTORS

Blood Group	1		2		3		4	
Incidence Owensboro Tube Works	4		67		15		64	
	2.67%		44.66%		10%		42.66%	
	RH+	RH—	RH+	RH—	RH+	RH—	RH+	RH—
	2.67	0.0	38.6	6.	9.33	.66	36.6	6.

Fig. 5.

Fig. 4 shows the results of blood types and subgroups of Rh+and Rh— in the females. Fig. 5 shows the percentage of male employees in our "bank."

WHOLE blood is being used more and more by physicians and surgeons in treating the sick and injured. Not too many years ago, a blood transfusion was regarded, by the laity at least,

Works physician drawing blood for type, Rh factor, and Kahn test

as a last resort. Now, it is widely used as a prophylactic measure to prevent shock in a seriously injured patient. Often it is given before, during, and after operations. Hemorrhage cases, from any cause, are frequently transfused with whole blood, and quite often a life is saved by prompt and frequent transfusions. Many erythroblastotic infants can be salvaged by replacement transfusions with Rh— blood when indicated.

Just as soon as the word spread that our employees were being blood typed, everyone needing a transfusion for miles around began calling on us. This, of course, was a natural reaction. As was pointed out before, some types of blood with the desired Rh factor are exceedingly hard to find. Obviously, we could not be expected to ask our folks to donate their blood to everyone, so a set of rules was established stating specifically who could receive the benefit of our "blood bank."

Every effort would be made to get blood donors from our list to:

1. Any employee of Owensboro Tube Works needing blood.

2. Any employee's immediate relative, which would include parents, sister or brother, children, and husband or wife.

All people, at all times, are not able to give blood for transfusions. There are many contraindications. A blood donor requirement guide is as follows:

In general, any age is accepted, 18 through 59; both sexes accepted; blood pressure should not be under 100 or over 200; temperature should be normal (97 to 99.2); the weight should be 110 pounds or over.

No person should be accepted as a blood donor who gives a history of having had arthritis, diabetes, anemia, heart disease, malaria, bone infection, rheumatic fever, tuberculosis, allergy, stomach ulcer, epilepsy, typhoid fever or syphilis.

Donors should be postponed for various lengths of time following major injuries, appendectomy, boils, colds, streptococcic infection of the throat or other parts of the body, childbirth, menstruation, any major operation, tooth extractions, tonsillitis, tonsillectomy, etc.

The above conditions are general in character and the final decision would rest with the physician taking the blood.

HARDLY a day passes but that the Medical Section is called upon to send one or more donors for a sick employee or close relative of an employee, since our "bank" has been in operation. The employees are enthusiastic about it, and there is rarely any trouble in supplying all the donors needed. At the present time, we have an employee in the hospital with leukemia. This patient has received at least 12 or 15 blood transfusions from friends and relatives in the plant.

A spot check of our medical records revealed that 30 to 40% of our employees had at one time or another had one or more operations. A much higher percentage have had babies. These facts make our "blood bank" more useful.

THIS "walking blood bank" has the definite advantage of saving time and production for everyone concerned, when whole blood is needed for a patient.

2. Whole blood is always available for medical purposes. Our bank of 1272 employees assures every blood type and Rh factor, when needed, even the rarest types.

3. The walking "blood bank" is good employee relations.

Congress on Industrial Health

THE TENTH Annual Congress on Industrial Health, sponsored by the Council on Industrial Health of the American Medical Association, will be held at the Roosevelt Hotel in New York City, February 20 and 21, 1950. The sessions will feature discussions on industrial medical service, environmental hygiene, and human relations in business and industry. For detailed information, write DR. CARL M. PETERSON, Council Secretary, 535 North Dearborn St., Chicago 10.

Are Industrial Hygiene and Safety Being Socialized?

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THE PROBLEM of industrial health and safety is of vital importance. The cost of poor health, in terms of both illness and injuries, is so tremendous that it is almost incalculable to industry as well as to the industrial worker. The worker suffers a severe loss in terms of earnings. Industry suffers a loss in terms of employee absenteeism, labor turnover, spoilage, inefficiency, fatigue, poor morale, unemployment compensation and workmen's compensation.

Industrial health is becoming more and more a community problem. What affects the wage earner affects the whole family and ultimately affects the community. History has shown that the need for the protection of the health of the working man has become more apparent as the years have gone by and that industry has assumed in ever-increasing amounts the responsibility for the health of its employees. Industrial hygiene engineers, safety engineers and industrial physicians are a result of this demand.

As the demand for industrial health has grown, there has also been increased demand on the part of certain classes of people for socialized medicine. Some people feel that it is only right for the community in the form of the government to take care of their health needs. To go a step farther, the analogy can be drawn that the state is being asked to substitute for the alleged shortcomings of private enterprise in not supplying adequate health protection. It is said by some people in rebuttal to this argument that whereas production is the only source of wages, and whereas industry is the only source of production, industry must become the source for health improvement. They go on and state that if our economy is to be a free economy, then it is logical to say that industry must assume in ever-increasing amounts more and more responsibility for its employees, which includes responsibility for the employees' health. To my mind, these arguments are both right and wrong. I do believe that industry should provide a healthy and safe environment for its workers. It should assume responsibility for the illnesses and injuries arising as a result of the employee's work. The remainder of the employee's health problems are his own responsibility and should be handled by him on a private basis.

It is my feeling that the fields of industrial hygiene and safety have not been explored to any appreciable extent; in fact, the surface has only been scratched. I believe that there exists a real challenge to the industrial hygienist and the safety engineer of private industry, as well as a real threat. Governmental agencies, both state and Federal, are rapidly publishing restrictive codes and are setting up enforcement agencies to see to it that industry complies with these codes. Members of management complain about many of these restrictions and say that in some instances compliance with them would force the industry out of business. The basis for complaint is that the codes are not in their entirety well thought out, are too restrictive and are not based on practical limitations but rather on theoretical limitations. There is, as you all well know, some difference between the use of a material in a laboratory and in a factory. Many governmental employees do not realize this fact.

The thought comes to my mind that perhaps the reason for governmental interference and the regulation that ensues is that industry as a whole has been negligent in not assuming responsibility and leadership in these fields. No one can deny that for years there has been an ever-increasing tendency for industry to try to reduce accidents by improving machinery and putting into effect modern safety procedures. Industry has also been improving the health of its workmen by improved ventilation, controlled hygiene and careful supervision of the use of toxic materials. But the institution of these modern safety and industrial hygiene controls by private industry has not always been sufficiently rapid nor well done to satisfy the people in the community and, as a result, they have turned to the government for assistance.

INDUSTRY in the field of industrial health and industrial accident prevention has not generally kept abreast of the modern techniques, although there are notable exceptions. Too often the immediate cost has been the factor which has gone against adopting modern procedures which come high. Answer in your own minds as to whether your industry is doing all that it can to prevent accidents and to insure that your employees are working in a healthy atmosphere. Do you have adequate pre-employment examinations? Are you sure that your working men are physically suitable for the jobs they are doing? Do you have provisions so that the working man, as he grows older and less physically able, is transferred to more suitable work? Do you have periodic examinations to determine the health of your workmen? How noisy is your plant? Are the lights in your plant adequate? When did you check the vision of your employees last? Are you sure that all of the people running the machines in your plant can actually see the control dials? How many loose boards are there in the floors of your plant? How many cases of pneumoconiosis or silicosis are there in your plant? Before you say none, when did you last x-ray the chests of your exposed workmen? How many of your tractor drivers have central nervous system syphilis? In whose plant will a truck be driven into an

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open elevator shaft next? How many of your people have lead poisoning? How many of you know the modern detection for lead poisoning? How many of you recognize and report all of your accidents? How many are working the cripple and are not considering him to be a lost-time accident? How many of you know exactly where every bit of solvent is in your plant? Are you sure that your working men are not cleaning their hands with carbon tetrachloride or with benzol? Are you having those people who are exposed to the aromatic and aliphatic hypdrocarbons examined? As a safety engineer, do you have the very latest in protective devices in use in your plant? We could ask ourselves questions such as these for hours, and I venture to say that there are many who could not come up with a respectable score.

It is my opinion that the negative answers to questions such as these are the reasons why governmental agencies are moving in and attempting to take over and run our jobs. The American people are accustomed to the best, and it is only logical that they will strive to have the best in working conditions. Actually, every one of us as individuals also wants safe, healthy, pleasant working conditions. As individuals we are honest enough to admit that private industry, using all of the resources at its command, can do a much better job of providing a healthful environment than can ever be obtained by complying only with governmental controls. When governmental controls become the regulating force, it is only natural to assume that the resulting health protection will not be as good as could be obtained by private initiative, unhampered by government.

TO ME the problem of industrial health and industrial accident prevention is a crusading type of business. I realize that you will have to fight to get many of the things that you want. I believe that the management of any company can be persuaded to give you almost anything in the line of health protection providing you present logical evidence that that thing is needed. There is no industry that wishes to be placed in the position of being men killers, and you know it. Management just does not like to spend money wastefully. This means that you safety engineers and you industrial hygienists are going to have to learn your vocations and then sell this learning to your management. How many of you have read DR. SAPPINGTON'S "Industrial Health?" How many of you have read Frederick Lippert's "Accident Prevention Administration?" How many of you read regularly *The Journal of Industrial Hygiene and Toxicology?; Industrial Hygiene Newsletter?; Safety Engineering?; National Safety News?* How many of you are keeping up with your jobs? It is certainly no longer true that the only background needed by an individual to qualify for the position of safety director is that of being a "nice fellow." Now, the safety director must be a highly trained individual, learned in his vocation, who, by knowing what needs to be done, convinces management that it should be done, and who, by doing it, produces results which convince management that it should have been done in the first place.

Industrial hygiene is a relatively new field of endeavor. It is so new that there is a shortage of competent industrial hygienists. The industrial hygienist must be a highly trained man, usually a chemical engineer, who is acquainted with the multiple instruments of his profession, is able to use them, is able to interpret the results, and then is able to apply the results so that there is a tangible reduction in occupational hazards. You all know too well the examples of fly-by-night ventilation and haphazard handling of toxic materials. You probably have had some experience with these in your own plant. Do you have a fellow who can tell just by sniffing whether or not the atmosphere is polluted, or a man who says "What are you talking about? Benzol is not toxic, we've used it for years." These individuals are misfits in their positions and are really dangerous to have around. The modern industrial hygienist makes it his business to know all of the environmental hazards in his plant. With the aid of scientifically constructed equipment, he is constantly seeking out potential hazards. Once located, he advises upon the proper steps to take in eliminating the hazards and then he keeps pressing for their actual elimination. His job is one of scientific detection and elimination.

IN CLOSING, I would like to emphasize that well-known and often-repeated fact that the world is progressing all the time. It behooves each one of us to keep in step with the times because if we don't we shall certainly fall by the wayside. The industry which was foolish enough to attempt to make a profit at the expense of the lives of its working people has ceased to exist because it was doomed to failure from the start by its own acts. The industry which is doing only a half-way job in a lackadaisical manner in the field of industrial health and accident prevention cannot progress very far and is asking for and will in all probability receive governmental control. The industry which respects its working people and exerts every effort to make their environment a healthy one, and sees to it that its machines are modern and equipped with every possible safety device will profit measurably in all respects. And just as important, that same industry is doing a signal service to its community and to its country by proving that private enterprise is worthy of the recognition of a free people. DR. ERNEST IRONS, President of the American Medical Association, recently stated that "the road to health is the road to peace and prosperity."

(B. F. Goodrich Co., 500 South Main Street.)

About Alcoholism

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ALCOHOLISM today is America's unrecognized No. 1 emotional health illness. It destructively affects the individual, the family unit, and society. This serious illness is, moreover, and with increasing frequency, causing accidental death, suicide, homicide, and manslaughter in all age groups. See your daily newspaper.

Statistics report approximately 800,000 known seriously sick alcoholics in this country, and about three million heavy "social" drinkers, or incipient alcoholics. But these are minimum statistics, based on hospital and police records. The actual figures are undoubtedly much higher.

The alcoholic is a very sick person—sick in his thinking and behavior. He is unpredictable and mood-driven.

He is also handled by alcohol to such an extent that his drinking interferes with his life and with his important activities.

Alcoholism is a symptom of some—usually deep-seated—disturbance. It is like the tip of an iceberg. It may be symptomatic of any major or minor psychiatric reaction type. A large number of alcoholics, however, present no marked psychopathology; rather, they fall into a borderline group characterized chiefly by a "weak ego." One might say that these individuals have "cancer of the ego" and that, as with all cancers, early recognition and proper treatment are of the utmost importance.

Starting out on the premise that the ego is the core of human personality, one finds that these "weago" (weak ego) individuals lack or have not adequately developed one or more of the four essentials that are found in a strong and healthy ego, and which result in purposive and efficient conduct and living. (One must also remember that much of the content of the ego lies in the field of the unawareness.)

The four ego characteristics which this type of alcoholic lacks, to a great extent, or does not possess, are:

1. *Independence* (self-government).
2. *Freedom* (to think and act at a mature level).
3. *Power* (to manage situations and take responsibilities).
4. *Prestige* (assurance and feelings of adequacy).

In working with such a patient, we feel that, if his brain is still intact, it is possible for him to learn to understand the origin, the nature, and needs of expression of the ego weakness which lies behind his alcoholism.

But in addition to understanding himself better, the patient should be educated, and re-educated, about his personality and alcohol problem by daily active use of the following guides:

1. He must be convinced *from his own experience* that his reaction to alcohol is so abnormal that any indulgence for him constitutes a totally undesirable and impossible way of life.
2. He must be completely sincere in his desire to stop drinking once and for all.
3. He must recognize that the problem of drinking for him is not merely a problem of dissipation, but of a dangerous psychopathological reaction to a (for him) pernicious drug.
4. He must clearly understand that once a man has passed from normal to abnormal drinking, he can *never* learn to control drinking again.
5. He must come to understand that he has been trying to substitute alcoholic phantasy for real achievement in life, and that his effort has been hopeless and absurd.
6. He must recognize that giving up alcohol is his own personal problem, which *primarily* concerns himself alone.
7. He must be convinced that at all times and under all conditions alcohol produces for him, not happiness, but unhappiness.
8. He must come to understand that the motive behind his drinking has been some form of self-expression, some desire to gratify an immature craving for attention, or to escape from unpleasant reality in order to get rid of disagreeable states of mind.
9. He must understand that alcoholic ancestry is an *excuse*, not a reason for abnormal drinking.
10. He must realize that any reasonably intelligent and sincere person, who is willing to make a sustained effort for a sufficient period of time, is capable of learning to live without alcohol.
11. He must fully resolve to tell the truth and the whole truth, without waiting to be asked, to the person who is trying to help him—and must be equally honest with himself.
12. He must avoid the small glass of wine—i.e., the *apparently* harmless lapse—with even more determination than the obvious slug of gin.
13. He must never be so foolish as to try to persuade himself that he can drink *beer*.
14. He must never be so childish as to offer temporary boredom as an excuse to himself for taking a drink.
15. He must disabuse his mind of any illusions about alcohol sharpening and polishing his wit and intellect.
16. He must learn to be tolerant of other people's mistakes, poor judgment and bad manners, without becoming emotionally disturbed.
17. He must learn to disregard the dumb advice and often dumber questions—of relatives and

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friends, without becoming disturbed emotionally.

18. He must recognize alcoholic day-dreaming —about past "good times," favorite bars, etc.,— as a dangerous pastime, to be inhibited by thinking about his reasons for *not* drinking.

19. He must learn to withstand *success* as well as failure, since pleasant emotions as well as unpleasant ones can serve as "good" excuses for taking a drink.

20. He must learn to be especially on guard during periods of changes in his life that involve some emotion or nervous fatigue.

21. He must try to acquire a mature sense of values and learn to be controlled by his judgment instead of his emotions.

22. He must realize that in giving up drinking he should not regard himself as a hero or martyr, entitled to make unreasonable demands that his family give in to his every whim and wish.

23. He must beware of unconsciously projecting himself into the role of some character in a movie, book or play who handles liquor "like a gentleman," and of persuading himself that he can—and will—do likewise with equal impunity.

24. He must learn the importance of eating—since the best preventive for that tired nervous feeling which so often leads to taking a drink is *food*—and must carry chocolate bars or other candy with him at all times to eat between meals and whenever he gets restless, jittery or tired.

25. He must learn how to relax naturally, both mentally and physically, without the use of the narcotic action of alcohol.

26. He must learn to avoid needless hurry and resultant fatigue by concentrating on what he is doing rather than on what he is going to do next.

27. He must not neglect care of his physical health, which is an important part of his rehabilitation.

28. He must carefully follow a daily self-imposed schedule which, conscientiously carried out, aids in organizing a disciplined personality, developing new habits for old and bringing out a new rhythm of living.

29. He must never relax his determination or become careless, lazy, indifferent or cocky in his efforts to eliminate his desire for alcohol.

30. He must not be discouraged by a feeling of discontent during the early stages of sobriety, but must turn this feeling into incentive to action which will satisfy his desire for self-expression.

31. He must not drop his guard at any time, but especially not during the early period of his reorganization, when premature feelings of victory and elation often occur.

32. He must understand that, besides abstinence, his real goal is a contented and efficient life.

33. He must appreciate the seriousness of his re-education, and regard it as the most important thing in his life.

34. He must realize that most people seeking psychological help for abnormal drinking are above average in intellectual endowment, and that, while drinking means failure, abstinence is likely to mean success.

35. He must never feel that any of these commandments are in any way inconsequential, or secondary to business, play, or whatnot; and must conscientiously observe every one of them, day in and day out.

IN THE medical psychological approach it is also necessary by means of psychotherapy to have the individual develop inner peace so that he can live in the world, and in his world, without desiring or "needing" the socially accepted and easily available narcotic provided by any sort of alcoholic beverage.

This is finally accomplished by having the individual convince himself of the necessity of living automatically by and through the age-long enduring values of life, among which are:

1. Be a giver instead of taker. (Be as unselfish as possible.)
2. Tolerance.
3. Humility.
4. A definite belief in the worthwhileness of life.
5. The actual return to religion.

Through this acquiring or regaining of the enduring values, the successful patient develops a way of life which will give him inner peace and enable him to live without experiencing more anxiety, tension, hostility, frustration, etc., than he can handle; and when this is solidly achieved, he will not consciously or unconsciously be dominated to start drinking again.

One might mention here that some alcoholics have stopped drinking by themselves. Others have been helped by religious groups, lay groups, and lay-and-religious groups. Even the old "Keeley Cure" helped many an alcoholic; and some now recommend a conditioning or aversion treatment without psychotherapy; while others, with deeper interest, use this method in order to get a beach-head on the patient and then follow up with psychotherapy.

The author, as a result of personal discussions and conversations with other therapists, feels that, except in rare instances, deep, lengthy psychoanalysis alone, hypnosis alone, hypnoanalysis alone, narco-analysis alone, or the assaultive therapies alone—such as chemical, drug, or electric shock, or various types of lobotomy—are not helpful in the treatment of alcoholism. Generally speaking, especially trained psychiatrists are needed; and each alcoholic patient should be carefully examined and treated on an individual basis, the same as cancerous and tuberculous patients.

In conclusion, one must keep in mind that just as the alcoholic of today is radically different from the alcoholic of yesterday, so, also, is the social drinker of today, as compared with the social drinker of yesterday.

And finally, with this thought in mind, the question: To Drink or Not To Drink alcoholic beverages, in the world and times we live in, is a question of the utmost seriousness, involving, one should remember, the welfare of others, also, and mutilation or sudden death.

(2030 Park Avenue, Baltimore 17.)

Graphite, (Plumbago, Black Lead), as a Source of Dusty Lung Disease

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Detroit

IN A RECENT industrial compensation court hearing, the medical situation centered about the contention that inhaled graphite dust caused a disabling pneumoconiosis. In this instance, the claimant was exposed for not more than 14 months and not continually to dusts deriving from a mixture of one part bentonite and three parts graphite. In aqueous suspension this mixture was sprayed onto foundry ladles for the purpose of preventing molten ferrous metal from clinging to the ladles. At times this same spray may have been applied to molds as facing material. On occasion these same materials in dry form may have been dusted onto molds for facing purposes. High but unmeasured atmospheric dustiness existed. The fact that the subjective symptoms finally leading to a claim for disability were stated to have appeared within two or three days after first starting this work, at once tends to invalidate any belief that any significant pneumoconiosis might have been so promptly inaugurated. Appropriate industrial hygienic and medical examinations, including multiple x-ray examinations of the chest, led to the conclusion that no merit existed in the claim presented. Notwithstanding our own convictions that the claim had no merit, it was necessary to get together a lot of suitable material for defense in combating the claim. We did set about an accumulation of everything available for this purpose. Out of this accumulated material derives this manuscript.

Since graphite is in wide and diverse use in industry, similar claims are expectable. The printed items on this topic being relatively few in number, widely scattered, and often in foreign languages, this compilation is proffered to facilitate the actions of others, who may be confronted with similar situations.

Prior to any presentation of data precisely limited to graphite and its impurities, it may be advantageous to consider and lay aside other substances involved in this present matter and still others in use in some other foundries for the same objectives. Bentonite, a colloidal silicate, is a mineral of inconstant chemical constituency and physical properties widely distributed over the United States, but chiefly encountered in Western states and notably Wyoming. The free silica impurity content of true bentonite is so low as to be negligible. The extensive industrial, medical, and cosmetic (including soaps) usage of bentonite is such as to have provided exposures ample to the disclosure of unwanted physiologic properties. No significant ones are now known to exist. In some foundries devoted to precision casting, such agents as ethyl silicate are employed for bonding purposes, with or without graphite, bentonite, or similar substances. At once it is to be recognized that some of these organic binders are highly toxic in themselves[1] and wholly apart from associated graphite or bentonite.

In divers foundries and variously for use as facing materials, sand adjuvants, ladle and crucible protectors, core washes, etc., may be found powdered "sea coal," lamp black, carbon black, tripoli, ground quartz, sand, and non-siliceous partings representing phosphates and carbonates. Some practices call for binders and dextrin solutions may serve as an example. The confusing term "sea coal" belongs to the archaic. Long ago, this term was in common use distinguishing mineral coal from charcoal. The first bituminous coal in England represented chipped off outcroppings from the North Sea coast sometimes collected only at low tide. This fuel was brought into London by boats, hence the term "sea coal." Notwithstanding, today in some foundries "sea coal" designates any finely pulverized coal employed about molds and cores. Tripoli, (not tripolite, diatomaceous earth, infusorial earth, white peat, kieselguhr, or diatomite), is almost pure free silica, in cryptocrystalline state, but because of physical properties is less given to atmospheric dustiness than quartz sand equally ground.

Nature, Sources, and Uses of Graphite

GRAPHITE, an allotropic form of carbon, often is described as "crystalline carbon." However, this same description is likely promptly to refer to "amorphous" graphite. Since amorphous graphite lends itself to x-ray diffraction patterns, a quality dependent upon the crystal state, it may be inferred that the amorphous variety as well as the flake state represents degradation of crystals. Unlike its kindred mineral, the diamond, the hardest of minerals, graphite is one of the softest, being softer than talc which is a standard for softness on scales of relative hardness. Graphite is so soft as to be unctuous, a quality promoting its use as a lubricant. Both synthetic and natural graphite in its three forms are abundantly available but none is pure and purification is difficult. In trace quantities of low quality, graphite's natural distribution is near universal. Commercial production is known to at least 11 countries and to about the same number of states in the United States. Production of natural graphite, in part, is governed by economic situations that provide cheap labor. This factor influences the fact that the foremost source of crystalline graphite is Ceylon and Madagascar, while Mexico is the prime supplier of the amorphous type. The center of artificial graphite manufacture is the Niagara Falls district in the electric furnace industries.

From The Industrial Health Conservancy Laboratories, 10 Peterboro Street, Detroit, Michigan.

The geologic origin of the carbon of graphite is uncertain. Some is found in sedimentary deposits; others are associated with igneous rock. At least some graphite earlier existed as coal.

The impurities of graphite largely may be responsible for physiologic action sometimes attributed to graphite itself. Free and combined silica are common impurities along with iron oxides, carbonates, and their associated metals. Some deposits are so low in graphitic material that the latter represents as little as 35% of the total. Some uses of graphite are such that impurities are of no consequence. The average SiO_2 content of natural graphite approximates 7%. While some industries employ graphite only in lump form, this substance readily lends itself to fine grinding so that high dustiness characterizes many of its applications.

The original use of graphite perhaps was for decorative purposes, and its very name derives from the Greek word "to write." Before its proper identification it was regarded as a lead compound, hence our "lead pencil," since the lead of the lead pencil is graphite although some pencil leads are made from carbon black. The use of graphite is best known to the general public from its employment in the well known stove polish common to every household prior to the advent of enameled stoves. Its more common technical uses are now mentioned—in the manufacture of crucibles, electrodes, arclight carbons, foundry facing and molds, lubricants, rust preventive coatings and paints, boiler linings, boiler scale preventives, explosive glazes, electrotyping chemicals, self-oiling bearings, pumps, piping and fixtures for corroding chemicals, batteries, piston rings, shot polishes, rubber products, cordage, hat polishes, linoleum, flat glass, etc. All considered, it appears that the industrial applications of graphite are so wide-spread that should any harmful physiologic properties exist, these also would be wide-spread.[2,3,4,5]

The Physiologic Action of Graphite

GRAPHITE is one of the most inactive agents in forming chemical compounds. Occasionally mention is made of graphitic acid, a substance of uncertain constituency. Thus it becomes unnecessary to explore possible harmful properties of graphite derivatives. Since the melting point of graphite is not less than 3000°C, volatile derivatives are unexpectable. The local action of graphite is less than that of soot or coal dust, which latter are somewhat more important because of their tarry content. By this elimination, the toxic properties become essentially limited to the possibilities of the production of a pneumoconiosis, since, in fact, large numbers of workmen somewhat regularly inhale graphitic dust in the course of their employment.

The relatively meager number of publications dealing with graphite in relation to the pneumoconioses is approximately equally divided into those that contend or imply that graphite produces a characteristic, significant pneumoconiotic state after due exposure and those others contending that no pneumoconiosis may arise or only the benign type akin to that from various nuisance dusts.

Dassanayake[6] has presented a damaging case against the crystalline form of graphite, which he designates plumbago, in Ceylonese workers. After describing the geologic situation, methods of mining, operations, and conditions of work, he discusses occupational exposure in general. He found no skin damage. In fact, he regards plumbago as an advantageous coating for the skin. His interest is particularly directed to underground workers, these being of somewhat superior physical type, and the aboveground plumbago curers of lower physical status. Quoted directly from his publication is the following:

"Lung disease is very rare among underground miners. Fifty persons who had worked for over 10 years as underground miners were examined radiologically and, though they had no clinical symptoms of chest disease, radiographs in four persons showed diffuse fibrosis of the lungs.

"Sixty-two persons employed in the plumbago curing sheds near Colombo where there is a greater dust hazard were examined clinically and radiologically. Clinically only 33 persons (53%) showed normal lungs. Radiologically 51 persons (82%) showed abnormalities varying from fine striation to gross disease. Lung abnormalities seem to increase with increasing length of service in plumbago curing. Mantoux tests carried out showed an incidence of 83% of positive results.

"The general health of the workers in the plumbago curing sheds is far from satisfactory. They incur a very considerable dust hazard in comparison to the underground miners in the plumbago mining industry."

This paper includes photographs of two chest films, respectively captioned:

"A man, aged 42, for 30 years worked as an underground plumbago miner. The radiograph shows diffuse fine nodulation."

"A man, aged 38, for 20 years worked as an underground plumbago miner. The radiograph shows diffuse fine nodulation."

Dunner,[7] a British observer, in 1945 reported lung changes from the inhalation of "pure" among five workers, never otherwise exposed to industrial dusts. Of the five, three presented mild clinical symptoms limited to cough, dyspnea, and excessive expectoration. In none was the tubercle bacilli established and only one presented suggestive x-ray evidence of healed tuberculosis. The five roentgenograms were reproduced, and appearance similar to silicosis is mentioned.

Dunner and Bagnall[8] describe one instance of pulmonary cavitation in a workman, aged 64, employed in a graphitic trade for 17 years. In 1939 he was diagnosed as presenting tuberculosis but tubercle bacilli were never established. After apparent recovery he was not further exposed for six years when a radiologic examination revealed an almost identical state with that of 1939. Both times there appeared massive opacity in the

right apex, less opacity in the left apex, and a golf-ball-size opacity in the left root shadow. One year later, this patient coughed up large quantities of black partly carbonaceous substance. This condition was designated as graphite pneumoconiosis.

In a later paper, Dunner[9] describes graphite pneumoconiosis as sometimes occurring in the miliary or "snowstorm" form but indicates that as the condition progresses the miliary pattern disappears. A discussion of Dunner's[10] publications appearing in the *British Medical Journal* is of unfavorable trend, emphasizing that all patients were able to work and that lesions described as fibrotic may, in truth, have represented only accumulations of graphite itself with the absence of tissue response.

Among the earlier publications is that of Hollmann,[11] 1930, who examined workers in a pencil factory who were exposed to graphite or carbon black dust or mixtures of the two. Those exposed for five years or possibly more, exhibited no pneumoconiosis, although 9.1% presented the "snowstorm" phenomenon in chest films. Among those exposed for shorter periods, 1.6% possessed the snowstorm manifestation. In 19 cases, bronchitis and emphysema were noted. Some old tuberculosis was encountered. Hollmann concludes that the action of graphite dust is not unlike that of coal dust.

The International Labor Office Supplement,[12] 1939, in an unsigned article, appraises the older literature as to the work of Koelsch and Kaestle[13] and others. This compilation states in part:

"These investigators examined 120 workers engaged in extracting and preparing crude graphite, aged from 20 to 60, the majority of whom had a working experience of five to 25 years, a small number only (9%) having attained 40 years' experience. About half of these workers were engaged in extraction and the others in preparation. The older workers complained most frequently of respiratory trouble and, in fact, were often found to suffer from bronchitis and emphysema. Radiological examination revealed on several occasions slight changes in the pulmonary picture and, in six individuals, (5%), silicosis of moderate extent: more or less abundant small mottling of the size of a pinhead to that of a grain of rice and more or less marked accentuation of the hilar shadow with reticulation. Borderline pictures were found 15 times, approximating to the normal picture, in the form of slight enlargement and accentuation of the hilar shadow but with little mottling in the pulmonary fields. It may be said with certainty that these signs cannot be interpreted as symptomatic of a form of pneumoconiosis, even when inhalation of dust brings about changes in the bronchial tubes and the lymphatic system, leading to the production of these borderline pictures.

"The authors of the investigation were, therefore, led to the following conclusions: liberation of dust certainly occurs, as is proved by the appearance of the workers, who are 'black' from head to foot, more especially in the grinding mills. Very fine dust certainly reaches the pulmonary tissues, but pure graphite has always been considered highly inoffensive; yet the question of lung diseases does arise, in the case of the miners exposed to the inhalation of rock dust (gneiss and graphite with a quartz content, argilaceous ores) given off in course of boring, firing, grinding and transport, etc. It should be stated that the amount of silicious dust present does not seem to be very great. The authors are even of the impression that the action of this dust is attenuated by the simultaneous inhalation of graphite dust, which is drained from the pulmonary alveoli into the lymphatic spaces and glands, where it accumulates and causes—if present in large quantities—a process of thickening and of proliferation of the interstitial connective tissue and thickening and hardening of the lymphatic glands. These changes show on the radiograph in the form of veiling and diffuse opacities, gland shadows, etc. On the other hand, definite silicotic pictures, such as those due to inhalation of dust rich in silica, were generally lacking in the case of graphite miners. As a result of their experience, Koelsch and Kaestle do not feel able to deny that, in course of extraction of graphite, dust containing quartz may set up silicosis in the case of very long working experience and special susceptibility, but, where this occurs, it is always a case of rare silicotic pulmonary changes of relatively slight degree.

"In their entirety, the data provided by the enquiry were not at all unfavourable, since it is not possible to speak of a specific risk due to graphite dust, any eventual risk being essentially dependent on the nature of the rock which constitutes the gangue. By reason of its volcanic origin graphite is found embedded in the primary rocks, which represent the main risk of silicosis (as opposed to the sedimentary rocks and conglomerates)."

This International Labor Office report refers to a single case of pneumoconiosis attributed to graphite by Koopman:

"The worker in question was a man who had worked for about 50 years chiefly on graphite grinding and who died of an accident. The autopsy revealed marked pneumoconiosis, especially of the middle and upper regions, with chronic interstitial pneumonia, peribronchiolitis and nodular periarteritis, destruction of the lymphatic vessels and blood vessels, local necrosis of the tissues, but no tuberculosis. Despite the marked impregnation of graphite dust with concomitant tissue changes, hardly any subjective symptoms were noted. It was, therefore, a case of an entirely benign process."

Lastly, the International Labor Office report epitomizes the work of Lochtkemper and Teleky with respect to graphite in the following language:

"Lochtkemper and Teleky have studied the occupational risk of workers engaged in the

manufacture of graphite crucibles. In this industry pure graphite and clay are used and these products are mixed, malaxed, then moulded on a lathe for the manufacture of the crucibles. The total silica content of the mass is estimated at 4 to 6%. Liberation of dust was considerable, but the five workers examined, who had a long working experience (32, 29, 27, 22, 6 years of work) merely showed the picture of a slight form of pneumoconiosis."

In the manufacture of artificial graphite from coal or coke in electric furnaces, no significant pulmonary injuries due to graphite have ever been recorded. This same statement is applicable to the manufacture of graphitic electrodes.[14,15]

Critical Comment and Appraisal

AT THE present time the following statements with reference to the physiologic action of graphite appear to be warranted:

1. Graphite is readily taken into the lungs in the form of dust.

2. Graphite dust may lead to benign pneumoconiosis.

3. Disability from graphitic pneumoconiosis appears not to have been proved.

4. Among workers with graphite, silicosis may appear from silica existing as an impurity in the graphite or from the general mineral from which the graphite was derived.

5. Benign graphite pneumoconiosis lends itself to x-ray demonstration and possibly the x-ray opacities may represent only accumulations of graphite.

6. All forms of graphite (crystal, flake, amorphous) appear to be equally innocuous physiologically.

7. Locally, graphite is without significant action and possibly skin coating with graphite affords some protection against other associated irritants.

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Honorable Mention

COLLIER'S for October 22, 1949, features an article by Bill Davidson entitled "Donora: The Case of the Poisoned Air," which commends DR. JOSEPH SHILEN, Pennsylvania's Industrial Hygiene Director, and several others well-known as industrial hygienists: "The U. S. Public Health Service's best brains went to work sifting out the clues. The personnel included internationally famous engineers J. J. BLOOMFIELD and DR. HELMUTH SCHRENK, and equally famous research physician DR. HARRY HEIMANN." In the same issue, an editorial with the provocative title "Let's All Be Blue," warns "crusading journalists" against prescribing "a cure worse than the disease," and continues, "We were put in mind of this by two magazine articles .... One, signed by Walter White, the noted Negro leader, (in *Look*) suggested that a chemical bleach which turns dark skin white might help solve the race relations problem. The other, in a scientific publication, quoted DR. LOUIS SCHWARTZ'S opinion .... that the use of this hydrocarbon as a bleach would be impractical and dangerous," since the chemical is poisonous. Look for more on this subject in the January, 1950, issue of *Ebony*, where some of the pictures from DR. WILLIAM D. MCNALLY'S article "A Depigmentation of the Skin," in INDUSTRIAL MEDICINE for October, 1939, are to be used in an effort to correct certain misapprehensions following the mention of the "chemical bleach" above noted.

Intravenous Procaine as an Outpatient Procedure

LEWIS COZEN, M.D.,
Los Angeles, California

INTRAVENOUS procaine has lately been reported to an increasing extent. Bier[1-2] was probably the first to write about its use intravenously when in 1908 he administered it in the vein of an extremity that had a tourniquet proximal to the site of injection. His procedure was not followed widely. It may be that the reason for some novocaine deaths is the epinephrine that is so frequently added to the novocaine.[3] It is said that epinephrine trebles the toxicity of novocaine.[4]

Intravenous procaine has been used for a number of diseases. It has been used for jaundice,[5] for burns,[6] as a substitute for morphine after operation,[7] in arthritis,[8-9] for anesthesia,[10-11] and for serum sickness.[12-13]

Upon the injection of procaine intravenously, two changes occur: (1) hydrolization of procaine by an enzyme into para-aminobenzoic acid and diethyl aminoethanol; and (2) acetylation of para-aminobenzoic acid. It has been demonstrated that procaine or one of its hydrolic products disappears from the blood in 20 minutes.[16-18] That there is a basic structural similarity between diethyl aminoethanol, benadryl, and choline should be noted. It probably acts like benadryl[19] by competing in the form of diethyl aminoethanol with histamine on nerve endings. Thus it has a cholinergic action.[20]

The tolerance of procaine intravenously varies in different animals. In the rabbit it is 40 to 60 milligrams per kilogram,[21] in the cat it is 40 to 50 milligrams per kilogram, in the guinea pig it is 40 milligrams per kilogram,[22] and in the dog 62.4+/—14.6 per kilogram.[23] The human lethal dose is unknown. Certainly the percentage concentration varies with the toxicity of the drug. The death of animals occurred when the concentration of procaine in the blood was sufficient to cause medullary paralysis.[24] The concentration in man should be lower than the average minimal lethal dose of experimental animals, 40 milligrams per kilogram.

THIS report deals with the use of procaine intravenously as an office or clinic procedure. I also wish to report my sensations when the drug was administered to me intravenously.

Twenty cubic centimeters of 0.5% procaine in normal saline or distilled water were used for each injection. The instillation was made into the antecubital vein from a 20-cc. syringe. Three minutes were allowed to elapse for the slow instillation. Immediately prior to the administration of the drug, one ounce of whiskey was given by mouth. The whiskey diminished the severity and number of unpleasant sensations more effectively than phenobarbital, which was tried in the first few cases.

TABLE 1.

Diagnoses	Number of Patients
Partial ligamentous tear (sprains, strains)	70
Painful stiff joints following fracture	12
Rheumatoid arthritis	4
Hypertrophic arthritis	5
Tabetic crisis and Charcot joints	1
Fractures and dislocations (anesthesia for reduction)	9
Intermittent claudication (peripheral arteriosclerosis and Buerger's disease)	3
Ruptured intervertebral disc	2
Bursitis	2
TOTAL	108

It will be noted from Table 1 that no mention is made of the results obtained in the 108 patients. It would be misleading to give an estimate of the effectiveness of this method of treatment since relief of pain is subject to many variables. Suffice it to say that in 92 of the 108 patients temporary partial relief of pain was obtained. Satisfactory analgesia was obtained for the reduction of seven Colle's fractures and two dislocated shoulders. The analgesia was by no means complete, but was sufficient in each case.

I received the drug on two occasions for experimental purposes. After taking the ounce of whiskey, I was tested for superficial pain to pin prick and for deep pain by pressure on the tendo-achillis. I could note practically no diminution of pain to these tests after I drank the whiskey. The procaine instillation into my antecubital vein gave a feeling of warmth and slight mental dulling. When I was tested for superficial and deep sensation after the instillation was completed, I noted definite partial analgesia. My pulse rate and blood pressure were not altered.

The patients said that the drug made them dizzy and warm, but no patient collapsed or had convulsions. Several of the patients had multiple instillations so that a total of 124 injections had been given.

SUMMARY: Report is made of the administration of procaine as a simple out-patient procedure in 108 patients. Some temporary relief of pain and increased range of joint motion were obtained in practically every patient.

(2007 Wilshire Boulevard, Los Angeles 5.)

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Industrial Hygiene Foundation — Fourteenth Annual Meeting

THE PROGRAM for the Fourteenth Annual Meeting of the Industrial Hygiene Foundation, at Mellon Institute, Pittsburgh, November 16, 17 and 18, 1949, is as follows:

November 16, 1949

Seminar on Diabetes in Industry

PRESIDING: A. J. LANZA, M.D.

"Social and Economic Implications of Disease"—A. V. MURRAY.

"Detection of Diabetes in Industrial Workers"—HOWARD ROOT, M.D.

"Industry's Role in the Employment of the Diabetic"—JOSEPH T. BEARDWOOD, M.D.

PRESIDING: HOWARD A. RUSK, M.D.

"Diabetes in History"—J. H. BARACH, M.D.

"Role of Medical Department in Management of Accident Cases to Diabetics"—JOHN A. REED, M.D.

"Benefits to Employer and Diabetic Employee by Genuine Cooperation"—LOUIS I. DUBLIN, PH.D.

Legal Conference

"LEGISLATIVE Developments in Workmen's Compensation during 1949"—THEODORE C. WATERS.

"Rules and Regulations Relating to the Control of Occupational Hazards"—J. J. BLOOMFIELD.

"Legislation Relating to the Control of Air Pollution"—RICHARD F. HANSEN.

"Health, Sickness and Disability Insurance"—J. J. WITTMER, M.D.

"Problems in Administration of Workmen's Compensation"—Panel: FRANK BARNAKO, JOHN W. GIBSON, EMANUEL E. GORFINE, S. L. HANSON, T. LYLE HAZLETT, M.D., RAYMOND HUSSEY, M.D., and HENRY D. SAYER.

Chemical Conference

"RELATION of Particle Size to Retention of Particulate Matter in the Lungs"—JACK H. BROWN, PH.D.

"Atomic Oxygen at the Surface of Freshly Crushed Silica"—W. A. WEYL.

"Skin Absorption of Chemicals"—NORTON NELSON, PH.D.

"Misuse of Common Solvents"—E. M. ADAMS, M.D.

"Glimpses of the Range-Finding Toxicity Test"—Film.

Engineering Conference

"VENTILATION for Relief of Industrial Heat; Demonstration by Model of Influence of Radiant Heat"—W. G. HAZARD and K. G. DUNN.

"Mechanical Vibration and Worker Health"—H. A. VONACHEN, M.D.

"Equipment and Procedures for Stack Dust Sampling"—A. H. ARBOGAST and JOHN KANE.

"The Engineering of Factories for People at Work"—J. K. GANNETT.

"Correction of Machine Tool Controls for Reducing Physical Demands on the Worker"—Film.

"Corrosion-Resisting Materials for Some Exhaust Systems"—Report on a Survey.

"The Behavior of Dust and Fume Particles as Regards Selection or Design of Dust Collectors"—STYG SYLVAN.

November 17, 1949

Engineering Conference—Continued

"LEADERSHIP in Developing Human Resources"—ANDREW FLETCHER.

"Foundation Facts"—JOHN F. MCMAHON.

"Influences That Retard Industrial Development"—M. E. COYLE.

"Financial Cost of Compulsory Health Insurance"—ADOLPH SCHMIDT.

"Rest, Wakefulness and Work"—GEORGE LUDWIG, M.D.

"Executive Health Examination — Limitations and Advantages"—FREDERICK SHILLITO, M.D.

"The Challenge of Permanent and Total Disability in Workmen's Compensation—Restoration Costs vs. Savings"—STANWOOD L. HANSON.

"Health and Safety as Causes of Industrial Peace"—CLINTON S. GOLDEN and JOSEPH N. SCANLON.

November 18, 1949

Colloquium on Industrial Wastes

"A MANAGEMENT View of Air Pollution"—ALEX D. BAILEY.

"The Chemistry of Smog"—H. H. SCHRENK, PH.D.

"Turbulent Mixing of Stack Gases"—WARD F. DAVIDSON.

"A Public Relations View of Industrial Wastes"—G. EDWARD PENDRAY.

"Procedures for Determining the Magnitude of Air Pollution"—W. C. L. HEMEON.

"Some Meteorological Aspects of Air Pollution"—PROF. H. C. WILLETT.

"A Physician's View of Air Pollution"—

"The Social and Economic Aspects of Atmospheric Pollution"—LOUIS C. MCCABE.

"Science in the Control of Water-Borne Wastes"—GEORGE D. BEAL, PH.D.

"Air, Water and Industry"—Film.

ASSOCIATION NEWS

THE AWARDS made annually by the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS now represent an interesting and important part of the organization's activities. One of these, the WILLIAM S. KNUDSEN AWARD, established by GENERAL KNUDSEN in 1938, when he was President of General Motors Corporation, has attained national significance. Several others more recently begun, have a special, and growing, place in industrial and professional circles, notably the "Citation for Excellence in Medical Authorship," first given in 1948, and the "Health Achievement in Industry Award," which had its initial recipient in 1949. The selections are made by Association Committees, and the presentations are a feature of the Annual Dinner held on one of the Convention days. The KNUDSEN AWARD recipients prior to 1949 were: 1938-39, C. O. SAPPINGTON, M.D., DR. P.H.; 1939-40, LEROY U. GARDNER, M.D. (deceased); 1940-41, ROYD R. SAYERS, M.D.; 1941-42, CLARENCE D. SELBY, M.D.; 1942-43, WILLIAM A. SAWYER, M.D.; 1943-44, HAROLD A. VONACHEN, M.D.; 1945-46, ANTHONY J. LANZA, M.D.; 1946-47, CAREY P. McCORD, M.D.; 1947-48, LYLE T. HAZLETT, M.D. No award was made for 1944-45.

ROBERT A. KEHOE, M.D.

The Knudsen Award

THE 1948-49 WILLIAM S. KNUDSEN AWARD was presented to DR. ROBERT A. KEHOE, "for distinguished service to the field of industrial medicine." The presentation was made by DR. T. LYLE HAZLETT, who noted especially the important work done by DR. KEHOE in connection with the toxicity of ethyl gasoline, his absorbing interest in toxic hazards from all the kinds of chemicals used in industry, and his early appreciation of the need for adequate postgraduate training in industrial medicine. As physician, scientist and educator, DR. KEHOE is internationally known. He was born at Georgetown, Ohio, November 18, 1893; attended Ohio State University, 1914-15; graduated M.D. at the University of Cincinnati, 1920; was resident pathologist at Cincinnati General Hospital, 1919; pathologist at Cincinnati's Jewish Hospital, 1920-24; assistant professor of physiology at University of Cincinnati's College of Medicine, 1920-31; associate professor, 1931-39; and has been research professor since 1939. He has been Director of the Kettering Laboratory of Applied Physiology since 1930; medical director of the Ethyl Corporation since 1925; chief medical consultant for Associated Ethyl Company, Ltd., London, England, since 1928; medical consultant, Surgeon General's office, since 1944; member of the Committee on Industrial Medicine of the National Research Council since 1942; member of the sub-committee on biology of the Committee on Insect Control of the National Defense Research Commission since 1944; and a Fellow of the Graduate School of Arts and Sciences, University of Cincinnati, since 1937. He is a Fellow of the A.M.A. and of the American Public Health Association, where he has been chairman of the Committee on Lead Poisoning since 1938; and of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, of which he was a Director, 1941-44. His memberships include the American Association for the Advancement of Science; the American Physiological Society; the AMERICAN INDUSTRIAL HYGIENE ASSOCIATION, of which he was a Director, 1940-43, and President, 1945; the American Chemical Society; the Central Society for Clinical Research, Cincinnati Academy of Medicine; and the Ohio Academy of Science, of which he has been a vice-president since 1939. He has contributed numerous articles to scientific publications, and is the author of various chapters in reference works on industrial hygiene and toxicology. He is now a member of the Council on Industrial Health of the American Medical Association. DR. KEHOE is well liked by the many who know him, and universally respected by the many more who are familiar with his work.

Excellence in Medical Authorship

DR. HAROLD A. VONACHEN made the presentation of the Citation for Excellence in Medical Authorship. This was awarded to REX H. WILSON, M.D., GLENN V. HOUGH, M.D., and W. E. McCORMICK "in recognition of excellence in material and authorship of scientific and administrative contributions to the published literature in the field of industrial medicine and occupational health and hygiene during the year 1948," as exemplified in their article, "Medical Problems Encountered in the Manufacture of American-Made Rubber," in INDUSTRIAL MEDICINE (17:6, 199-207, June, 1948).

Health Achievement in Industry

DR. VONACHEN also presented the Citation for Health Achievement in Industry, which was awarded to Rome Cable Corporation, of Rome, New York. This Award is made in recognition of the establishment and/or improvement of employee medical services by an industrial concern. Rome Cable's President, A. D. ROSS FRASER, accepting the Award, said, in part: "Our company is a relatively new one, a product of the free enterprise system so ably described by DR. HENRY. (See INDUSTRIAL MEDICINE AND SURGERY, 18:10, 446-448, October, 1949.) It was founded in 1936 with certain ideals for providing better working conditions, harmonious labor relations and, within our ability to maintain and pay for them, increased progressive employee benefits. High on the list of those employee benefits was a medical department. The war delayed that part of our program for a time. To your Associa-

A. D. Ross Fraser (left) and Dr. James McDonough

Dr. Rex. H. Wilson (left) and W. E. McCormick

tion, and to DR. HAZLETT, DR. HOLMBLAD, and DR. SAWYER we owe a huge debt in finally getting us the man who now heads that department. We as a company believe that our organization needs more than bricks and mortar. We are indeed fortunate that in starting our Medical Department we found DR. JAMES MCDONOUGH, who is our Medical Director." (See INDUSTRIAL MEDICINE, 18:5, 177-188, May, 1949.)

Distinguished Service to the Association

IN PRESENTING this Award, DR. VONACHEN said, in part: "We also give an Award for distinguished service to our Association. This one is to DR. FREDERICK WILLIAM SLOBE, who served the Association as Director from 1938 to 1942; as Vice-President from 1942 to 1944; as President 1944-45; and as Secretary continuously since then. He has been Chairman of numerous committees, guiding and advising the work of each; and his own work in preparing and presenting records, scientific studies, addresses, and papers has greatly stimulated and inspired the development of the specialty field of occupational medicine over many years, in fact, ever since his first industrial affiliation in 1921."

The Founders

THE THIRTY-FOURTH Annual Meeting, in Detroit, in 1949, had a special significance, as Detroit was the scene of the Association's First Annual Meeting in 1916. It was, therefore, the occasion of a tribute to the seven men whose signatures appeared on the Association's Certificate of Incorporation. The text read: "In Tribute to DOCTORS C. G. FARNUM, ANDREW M. HARVEY, HARRY E. MOCK, SR., WILBER E. POST, and posthumously to DOCTORS THOMAS R. CROWDER, SIDNEY M. MCCURDY and J. C. STUBBS: Thirty-four years ago these seven men, Incorporators of our Association, with other of like vision and purpose met in this great city of Detroit, Michigan, where we are assembled today. All were convinced that many of the tragic and near-tragic injuries suffered by men and women at work were preventable; that many

Dr. Frederick W. Slobe (left) and Dr. Harold Vonachen

Dr. Harry E. Mock, Sr., (left) and Dr. Vonachen

of the diseases that afflicated the workers were due to unrecognized or inadequately controlled health hazards in industry. They envisioned the need for a concerted medical approach to the better control of these problems, perceiving the vast expansion of industry and the development of ever new and complex materials and work processes so manifold today. For their mutual advancement and that of their contemporaries and to the great benefit of all of us who followed them in this humanitarian endeavor they banded together to lay the foundation of this honored society. They devoted their active years and their talents unselfishly and faithfully to the cause and advancement of Industrial Medicine and of this Association which has grown strong and virile in its more than 2000 members and spread from Detroit to every state in the union and to many nations throughout the world. Therefore, in grateful tribute to their wisdom and foresight this Association, again assembled in Detroit, dedicates this Thirty-Fourth Annual Meeting to all of its honored Founders and Incorporators, to those still with us and in loving memory of those deceased."

NORMAN GILLMOR LONG, M.D., has been appointed Surgeon in Charge, full-time, for the Lumbermens Mutual Casualty Company in the New England area, with offices in Boston.

PAUL R. HAHN, M.D., Northwestern University Medical School, Chicago, 1926, member A.A.I.P.&S. since May, 1945, died on July 11, 1949, at the age of 49 in Racine, Wisconsin.

HARVEY THEODORE HEROLD, M.D., F.A.C.S., Newark, New Jersey, passed away during the month of August. DR. HEROLD received his degree at New York University in 1918, and was Assistant Surgeon, Department of Gynecology, Newark City Hospital, and Attending Surgeon at the Hospital of St. Barnabas and for Women and Children. He had been an A.A.I.P.&S. member since May 1, 1943.

Dr. Theodore L. Story

ALL AMERICAN OPTICAL people were shocked and grieved to learn of the death of DR. THEODORE L. STORY, medical director of the Company, on August 9, at St. Vincent's Hospital, Worcester. DR. STORY, who had been ill for several months, was 61 years old. As plant physician for nearly 25 years, he was known by virtually every employee in the Southbridge plants and had the respect and affection of them all. He was born in June 28, 1888, in Norwich, Connecticut. He attended Norwich Free Academy, Trinity College, and received his M.D. *cum laude* from Tufts Medical School in 1917. He also took post-graduate work at Harvard University Medical School. During World War I, he served in 1918-1919 as a 1st Lieutenant in the Army Medical Corps. From 1919 to 1922 he was associated with the U. S. Public Health Service, as executive officer, USPHS Hospital 6, in Boston. From 1922 to 1923 he was assistant to the surgical director of the Travelers Insurance Co. Engaged in private practice from 1923 to 1926 in Holden, he joined the company in 1926 as its medical director. DR. STORY was a Fellow of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, and a Director from 1943 to 1945; a Fellow of the American Medical Association and the Massachusetts Medical Society; and a member of the Massachusetts Society of Examining Physicians and Surgeons; Worcester County District Medical Society; Tufts College Medical Alumni Association executive council; Psi Upsilon Fraternity; American Legion (past commander, Southbridge Post 131); Southbridge Technical Society, and the Southbridge Rotary Club (past president). Elected to Alpha Kappa Kappa Military Fraternity and the Tufts College Honorary Medical Society, he was also a consultant on industrial medicine at Harrington Memorial Hospital. He was one of the founders of the 13 Club, an association of Southbridge World War I veterans, formed to commemorate their military service and to meet annually until no member survives. During World War II he served as medical examiner, Selective Service Board 137. —From *AO News*, August 12, 1949.

Central States Society

THE FALL MEETING of the CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY will be held Sunday, November 20, at the Palmer House, Chicago. DR. THOMAS C. BROWNING, President of the Society, will preside. The program, arranged by DR. J. M. L. JENSEN, Chairman of the Program Committee, is as follows:

"Trauma and Peripheral Vascular Disease"—G. deTAKATS, M.D.

"Long Range Problems Associated with Carpal Injuries"—JAMES K. STACK, M.D.

"Surgical Excision in the Management of Acute Burns"—HARVEY S. ALLEN, M.D.

"The Challenge of Alcohol Addiction to Preventive Medicine"—ANTON J. CARLSON, PH.D.

"Diabetes in Industry"—ROBERT W. KEETON, M.D.

"Bone Graft Without Fixation in Non-Union of the Tibia"—ARTHUR H. CONLEY, M.D.

INDUSTRIAL MEDICINE AND SURGERY

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Volume 18 NOVEMBER 1949 *Number 11*

That "Free" Medicine

JUST AS we go to press comes the news that Britain's Labor Government is about to place a charge of a shilling (14 cents) on each medical prescription, this to be paid by the purchaser.

Tinged with Prophecy

DR. RUTHERFORD JOHNSTONE'S Ramazzini Oration (pages 451-456) is a classic, tinged with prophecy. Industrial medicine has come far; its present-day concept embraces the whole man as he is. But "there is need for further evolution." Soon industrial medicine must take the next step, and study the man in terms of all that made him what he is. This will be peculiarly a function of the medical department. It involves so much more than industrial relations. "By no means is the program of industrial relations as presently engaged in by many industries to be considered as one of human relations. Its primary function is to minimize or remove friction between labor and management. To that end it has been useful. But an industrial relations program is devoid of the application of the social sciences and almost always ignores the utility of the occupational physician. It has failed to consider that step by step with our economic progress there has been a destruction of individual significance in living for the majority of workers. It does not and cannot see pain within a worker's heart or the unsatisfied yearning within his soul." The worker, in his contacts with his job, presents the sum total of the health, the economic situation, the political and religious beliefs, the living conditions, and the education, opportunities and background that have been his. And he is, in a sense, the product of the stresses and strains and frustrations which all of these have caused him to experience. And thus vastly more than "bargaining" is required when he develops "a rattle in the bundle he's been carrying." If, because of the rattle, he becomes a problem, "the only agency capable of accepting the challenge" of this problem is, as DR. JOHNSTONE says, "occupational medicine. . . . The world can look to clinical, experimental and research medicine for preventive and therapeutic progress . . . . But only to occupational medicine can it look for further evolution in the treatment of men within an industrial society."

What Happens to the Unfortified

IN A RECENT debate on socialized medicine, its chief propagandist, the Federal Security Administrator, didn't fare so well. Press reports of the meeting have it that, as he withdrew—after failing to answer 23 of the questions asked him from the floor—his parting shot was that he realized he'd been talking to "fortified ears."* For his side of the argument this was an unfortunate remark, as it brings to mind those other lines from Hamlet: "Upon my secure hour thy uncle stole, with juice of cursed hebenon in a vial, and in the porches of my ears did pour the leperous distilment. . . ." The analogy to the F.S.A. propaganda is exquisitely pat: the "secure hour"—in which we're lulled to dullness by our so-called social security; "thy uncle"—our own dear Uncle Sam, as represented by the present administration; "stole"—his approaches paid for from taxpayers' money; the "leperous distilment"—still more of the poison so unctuously spilled upon our ears "again and again and again" throughout the long years since 1933 ushered in "the era of the great deceit." And the analogy continues in the succeeding lines. It is well for the "wholesome blood" of our country that some ears are "fortified." May there be many more. Meanwhile politicians tossing off literary allusions should be careful lest, with respect to their own activities, they stir up such things, for example, as Shelley's line, in his sonnet on "Political Greatness," that "history is but the shadow of their shame."

---

* Act I, Sc. 1: *Bernardo to Horatio*: "Sit down a while; and let us once again assail your ears that are so fortified against our story. . . ." (Hamlet).

at the very first sign of a cold

STOP ***its development—***

antihistaminic therapy has been reported to abort the development of the common cold in 90% of the patients commencing therapy within the first hour of the appearance of symptoms.[1]

DETOUR ***distressing symptoms—***

antihistaminic therapy shortens the duration and decreases the severity of an established cold.[1,2]

BY-PASS ***spread of infection to others—***

the elimination of sneezing, lacrimation, rhinorrhea and coughing reduces cross-infection.[1]

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The Allergic Concept of the Common Cold: The symptoms of upper respiratory infections closely resemble those found in vasomotor rhinitis and hay fever. More histamine-like substances were found in the nasal secretions of persons suffering from colds than in allergic rhinitis.[4]

Dosage and Timing: Two CORICIDIN Tablets *at the very first indication* of a cold, then one tablet every three or four hours for three or four days. In established colds, one tablet every three or four hours for palliative effect.

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NEWS, COMMENT, OPINION

Our Responsibility

AS BORTZ so aptly summarized, "The society which fosters research to save human life cannot escape the responsibility for the life thus extended. It is for science not only to add years to life, but, more important, to add life to the years." This is our responsibility.

—HOWARD A. RUSK, M.D., *Bull. New York Acad. Med.*, in *West Va. Med. Monthly*, October, 1949.

Physiology

A LECTURE seminar course in "The Structure and Function of the Human Body" was recently given by Baylor University College of Medicine for members of the Gulf Coast Chapter of the American Society of Safety Engineers. The course included reviews and discussions of neuroanatomy and physiology together with discussions of the more common disorders affecting workers in the Gulf Coast industries. The course was given over a three-weeks period involving some 30 hours of study and discussion.

Cancer Nursing

THE Division of Nursing Education of Teachers College, Columbia University, will institute a survey course in cancer nursing in the winter session at the college, according to DR. R. LOUISE MCMANUS, director of the division. The course will give an over-all survey of cancer as a threat to health. It will consider recent advances and current problems in the medical and nursing care of cancer patients, and will study methods of controlling cancer in the community.

Hospital Training Plan

SAGINAW General Hospital may be chosen to inaugurate a pilot plan for the training of physicians in the field of industrial medicine and occupational health. R. A. Raper, hospital director, said the American Medical Association's Council on Medical Education and Hospitals is considering granting the hospital approval for the setting up of a residency program in occupational medicine. If the plan is approved this will be the first hospital in the nation for such a training program.

—*Saginaw, Michigan, News*, August 24, 1949.

Fellowship

THE Soroptimist Club, of Hartford, Conecticut, is offering a Fellowship for the Aid and Benefit of the Physically Handicapped. This will provide educational opportunity on a graduate level for an individual whose professional background and experience would qualify him to receive additional training. The Fellowship includes an appropriation of $1,500 to be given for maintenance, tuition, books, etc., which will be allotted to one person. Applications will be accepted up to January 1, 1950. For information address MRS. ALYCE PULLAR, 77 Steele Road, West Hartford, Connecticut.

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IN ACUTE AND CHRONIC SINUSITIS

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1. Nonallergenic, even on repeated administration.
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Fighting Worry

WHAT makes people tick? The answer to that is what the Eastman Kodak Company is teaching in simple terms to its supervisors to use in combating mental illness among employees. N. D. Hubbell, assistant director of training at Kodak, explains the program quite simply. Through the use of sound-slide films and directed discussion the supervisors (anyone from an assistant foreman up), are told the basic principles underlying human behavior and what they can do and can't do to rid an employee of worries. With this basic approach Hubbell believes about 80 to 90% of an employee's worries can be erased. The remaining per cent, involving deep seated anxieties, must be handled by the medical department. At present the what makes people tick system is being used by Kodak plants employing about 45,000 workers, including some 4,000 to 5,000 supervisors.

—*Milwaukee Sentinel*, September 22, 1949.

Parathion Poisoning

PHYSICIANS' Occupational Health Bulletin No. 5, July, 1949, published by the Bureau of Adult Health of California's Department of Public Health, says, "The group of insecticides known as organic phosphates has come into widespread use in the past few years, and because of their efficiency as economic poisons will undoubtedly be encountered more frequently. A previous bulletin (No. 1, July, 1948) described the pharmacology and toxicology of hexaethyl tetraphosphate and tetraethyl pyrophosphate, two compounds of this group. The present bulletin is concerned with a third member, parathion (O, O-diethyl-O-P-nitrophenol-thiophosphate) which is equally toxic and potentially hazardous if improperly handled.... Cases of poisoning have occurred in people engaged in the manufacture of the material, in those compounding solutions, in agricultural workers applying it, and even in people who have unwittingly come in contact with it. An example of the latter is the case of a welder who cut into a pipe containing parathion and developed symptoms of poisoning 10 minutes later." The bulletin discusses absorption, pharmacology, signs and symptoms, diagnosis, treatment and prevention.

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(1 Freed, J.A.M.A., Feb. 8, 1947)

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Symposium

MISSOURI State Medical Association Committee on Industrial Health presented a "Symposium on Industrial Health" at St. Louis on October 11, and at Kansas City on October 12. DR. VINCENT T. WILLIAMS, Chairman of the Committee was Moderator. Subjects and speakers were:

"Education in the Field of Industrial Medicine"—DR. A. J. LANZA, Institute of Industrial Medicine, New York.

"Physical Rehabilitation in Industry: Our Challenge"—DR. HAROLD A. VONACHEN, Caterpillar Tractor Company, Peoria, Illinois.

"Basic Science is Necessary in a Good Health Care Plan"—DR. DUDLEY A. IRWIN, Aluminum Company of America.

"Broad Horizons in Industrial Medicine" — DR. MAX R. BURNELL, General Motors Corporation.

Sick Leave

DURING World War II, while serving in the Army Air Forces, I was assigned the trouble-shooting job of trying to straighten out the difficulties being encountered at several air fields with civil service employees. One of my earliest eye-openers was learning how the employees looked on sick leave. In the middle of 1945 a woman applied for five days of sick leave. I said, "Are you sick?" She said "No." I said, "Then why are you asking for sick leave?" She said that if she did not use some sick leave soon, she would lose it. I said she could not have the time off. She said she would appeal to the Civil Service Commission. Actually, it did not go that far—but she *did* use the sick leave. On another occasion one of my fellow officers was in Tucson. He brought back a typewritten list which he had taken from a civilian bulletin board. At the top of it were the words, "The following civil service employees will take their sick leave as follows:" And I may add that I was unable to lick this practice.

—From "A Businessman's Appraisal of Mass Medicine," by ROBERT A. HORNBY, Vice-President, Pacific Lighting Corporation, in *American Economic Security*, 6:4, June, 1949, published by the Chamber of Commerce of the United States, Washington 6, D. C.

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Accordingly, Cambridge now makes available to Cardiologists, Clinics, and Hospitals its new "Simpli-Scribe" model Direct Writer to complement their present String Galvanometer Electrocardiographs.

The "Simpli-Scribe" model meets A. M. A. specifications. It is a fine instrument, embodying the designing and manufacturing skill of Cambridge — *pioneer manufacturers of the Electrocardiograph*—and is a convenient useful supplement to the standard Cambridge models. The "Simpli-Scribe" Direct Writer is intended for such uses as screening, gross pathology, emergency consultation, etc.

The "Simpli-Scribe" model is designed for Hospitals, Clinics, and Doctors who operate Cambridge String Galvanometer instruments as their primary equipment. It is, therefore, offered to those who now own, or who are installing, the "Mobile," "Simpli-Trol" portable, or "Research" model Cambridge Electrocardiographs.

Although distinctly an auxiliary instrument, the "Simpli-Scribe" model enables the Doctor or Institution to provide more complete Electrocardiographic service by complementing their standard Cambridge equipment.

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WITH more than seven million ordinary life insurance policies applied for in this country last year, 96 out of 100 were on persons acceptable for insurance, the Institute of Life Insurance reports. Of the policies issued, 93% were standard rate and 7% extra rate policies for persons found to have some medical, occupational or other impairment. Just under 4% of the applications for insurance were declined by the companies and the 275,000 declined amounted to $850,000,000 out of a total of $19,000,000,000 applied for. Chief cause for the declinations was cardiovascular-renal diseases. These accounted for between 40% and 50% of the declinations or somewhat over 100,000 cases. Medical history of past impairments was the next in importance, accounting for somewhat less than 20% of declinations. Physical findings other than cardiovascular-renal caused about 15% of the declinations; underweight and overweight combined less than 2%; occupational hazards less than 2%.

Practical Good

MAURICE SMITH and his brother, William, of the Bristol Manufactur-

ing Company, Bristol, Rhode Island, installed a department concerned solely with doing good. The Reverend Dr. Dale D. Dutton is in charge of this Department of Christian Relations, whose work is nation-wide. He has been given a free hand to help the needy and operate as he sees fit. Requests for help are varied: a man wants his losses at the dog track made good; a veteran needs a special kind of wheel chair; an alcoholic seeks help to break the habit; a small business headed for bankruptcy asks advice, etc. Pleas like the first one can be culled easily. Others are listened to and investigated. The enterprise hasn't helped the Smiths' business, which proves to persons who were skeptical that the motives back of it were not concerned with profit.

—*Advertiser's Digest*, May, 1949, quoted in *Industrial Hygiene Digest*, July, 1949.

Calisthenics

Two good weapons have been found in the campaign to eliminate aversion to work in offices, and perhaps even more so within plants: calisthenics and music. Our physiologists and psychologists are fully agreed on their values . . . . In order to find a remedy for the detrimental effects of sedentary occupations, many Swedish firms have introduced periods of physical exercise during the working day . . . . During the early stages, before the participants have become accustomed to the new activity, the grumbling is usually loud. Sample reactions: "You don't mean to say that I am tightening up my muscles while I am pegging away at my typewriter?" or "I am taking physical exercise twice a week . . . ." Office managers, too, may seem not a little concerned because of the shortening of the working time by these exercise periods. As the activities continue, the young lady typists who had been so cocksure of having worked with relaxed muscles realize, though they *were unaware* of it, that the muscles of their arms and shoulders had been as tense as steel springs. These "off-time athletes" soon begin to feel that they had not stiffened up so much between the performances. Office managers began to notice that more was being accomplished in less time than before. In addition, the atmosphere in the office had become more pleasant and cheerful. The promotion of better humor by these exercises is further heightened by the accompaniment of music. In the majority of establishments where physical exercises have been introduced, instrumental music has shown itself to be the best means for providing rhythm. Snappy march melodies and melodic dance rhythms put life into body and soul and enable the brain, at the same time, to switch off the power of the treadmill of routine. Atvidaberg's Industries, Sweden's largest producers of technical office equip-

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ment, has led the field for years in revamping and reorganizing its offices. This company has also expended much time and effort in getting the upper hand of inbred inertia. The program has been extremely successful with the employees.

—From an article by SVEN SIEWIN, abstr. in *Management Guide.*

In Connecticut

DR. JOHN N. GALLIVAN, chairman of the Industrial Health Committee of the State Society has appointed an executive committee within the larger group to consist of PRESTON N. BARTON, ALBERT S. GRAY, JOHN F. KILGUS, JR., ARTHUR B. LANDRY, ISRAEL S. OTIS, CRIT PHARRIS, PAUL W. VESTAL, C. FREDERICK YEAGER, and himself as chairman, and has assigned each member to a particular phase of the work of the parent committee as follows: DR. GALLIVAN—Council and House of Delegates, executive secretary of the Society, AMA Council on Industrial Health, Manufacturers Association of Connecticut, policy, procedures. DR. BARTON—Public Relations personnel of the Society, publications, dissemination of information, historian of the Committee on Industrial Health. DR. GRAY—State agencies (health, education, labor), Connecticut Dental Association, Connecticut (and American) Public Health Association, Industrial Hygiene Association, small plant health problems. DR. KILGUS—Board of Compensation Commissioners, legislation, insurance. DR. LANDRY—Development of county committees on industrial health. DR. OTIS—Connecticut State Nursing Association, American Association of Industrial Nurses, nursing educational institutions. DR. PHARRIS—Section on Occupational Health, Connecticut Safety Society, American Society of Safety Engineering, medical educational institutions, conferences, forums, and seminars. DR. VESTAL—Connecticut Hospital Association, American College of Surgeons, labor organizations, traumatic and restorative surgery, rehabilitation. DR. YEAGER—New England Conference of Industrial Physicians, American Association of Industrial Physicians and Surgeons, principles and practice of industrial medicine.

—*Connecticut State Med. J.*, August, 1949.

Industrial Medicine

INDUSTRIAL medicine is one of the 12 points in the American Medical Association's program for the advancement of medicine and public health, as announced early in 1949. Point 11 of this program reads as follows: "Greater emphasis on the program of industrial medicine, with increased safeguards against industrial hazards and prevention of accidents occurring on the highway, home and on the farm." At the recent annual meeting of the House of Delegates of the American Medical Association, the reports of the Board of Trustees and the Reference Committee on Indus-

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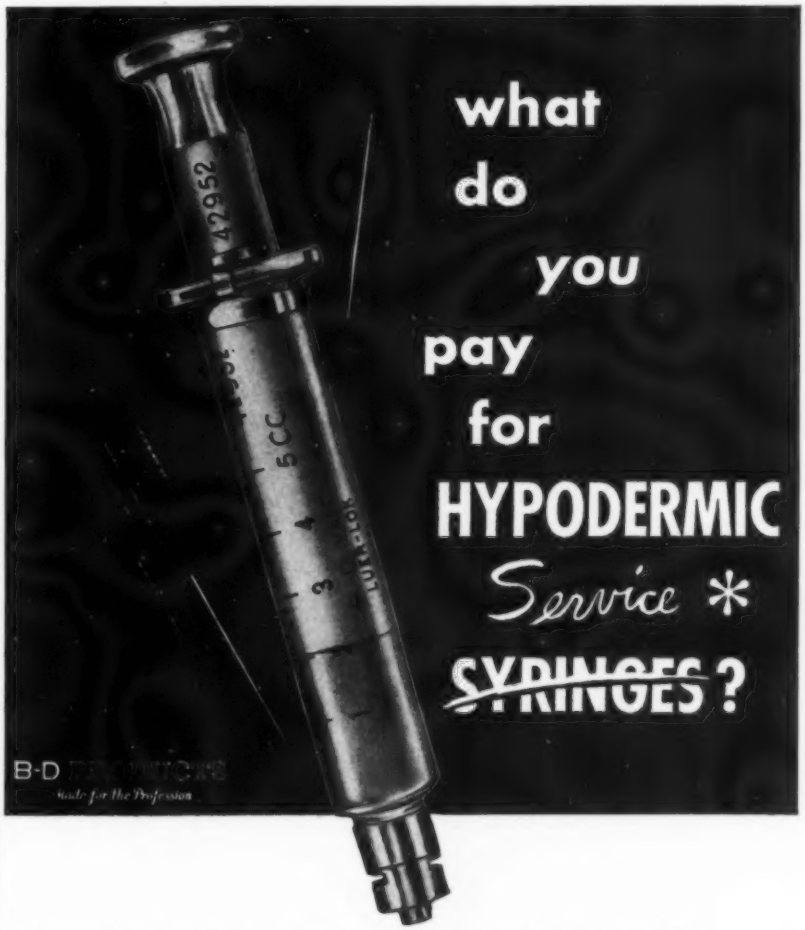
trial Health amplified point 11. These gave approval to the expansion of service in the field of industrial medicine and to cooperation with other groups in finding means of reducing deaths from accidents. The Board pointed out that "industrial medical plans are increasing; as good medical standards and resources in industry improve they can be of great service in maintaining independence and self-determination and in counteracting tendencies toward centralization and control." The committee commended the Council on Industrial Health for the proposal "of a constructive program placing primary emphasis on preventive medicine and positive health promotion, together with the all-out efforts to increase safeguards against industrial hazard and the prevention of accidents." They considered as highly desirable the establishment of a permanent conference group with labor and management at the national level. "This will permit not only discussion of the extension of industrial medicine and hygiene, accident prevention, and health education of workers, but also will serve to clarify the status of physicians and medical organizations in relation to industrial health activities, as well as to provide another medium of understanding concerning the ideals of service and responsibility prompting these efforts." The committee underscored the council's efforts to revitalize medical society committees on industrial health in the principal industrial areas; to form a liaison committee with other professional groups such as nurses, dentists, engineers and hygienists for better integration and cooperation in the industrial field; to expand facilities for professional training in industrial medicine and to include in professional education ways and means for bringing to the profession in general the important advances in industrial medicine. The committee definitely approved, so far as the budget permits, having consulting committees to the Council on Industrial Health; these would be the panels of experts set up by the Congress on Industrial Health on atmospheric pollution, toxic chemicals, hazardous physical agents, and harmful biologic exposures. They considered as important the liaison of the Council on Industrial Health with the Council on Medical Service to consider the employment phases of rehabilitation in industry and to study the medical care plans which are industrial in origin. The subject of industrial medicine and industrial medical care plans was further discussed in a section of the annual report of the Council on Industrial Health. Here it was pointed out that physicians in industry are frequently in an excellent position to evaluate the health needs of employed groups



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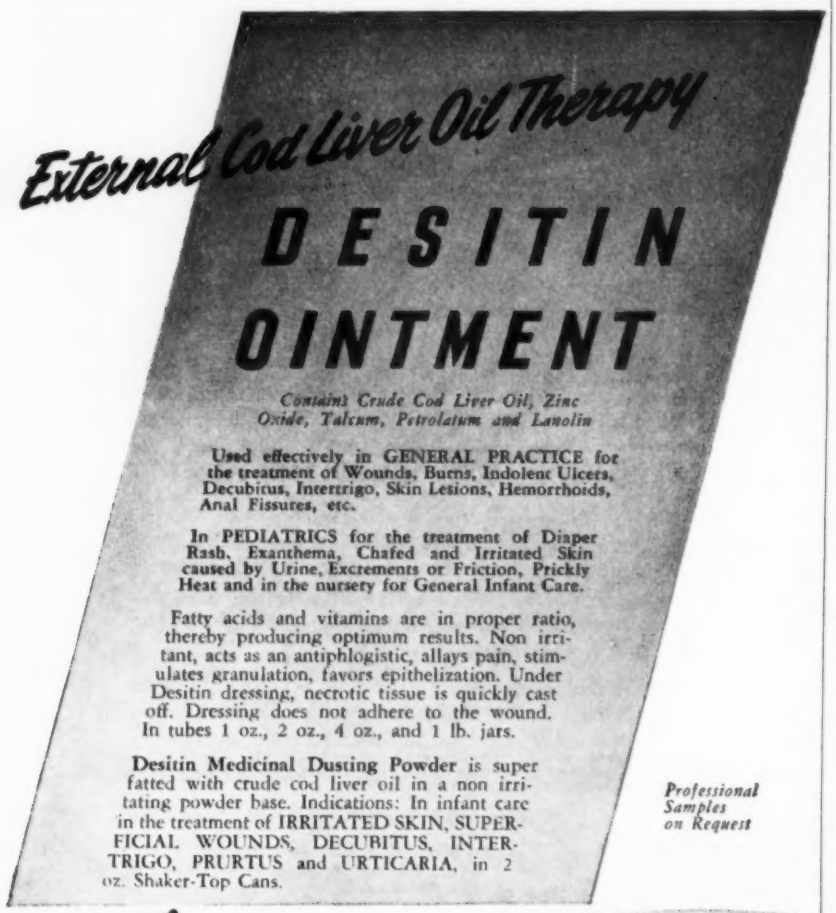
and to determine ways of meeting them. They concluded that industrial medicine, with its clinical roots and its primary interest in the promotion of individual effectiveness, can narrow the gap between clinical medicine and preventive medicine and health conservation.

—*Industrial Hygiene Newsletter*, October, 1949.

"Or Else . . . ."

HERE in Chicago, in this very hotel, John L. Thurston, assistant administrator of the Federal Security Administration, told the Tri-State Hospital Association less than two weeks ago that the hospitals either must go along with the Federal government's program, or expect to be taken over. There was no equivocation in what Mr. Thurston said. He wielded a political club, and said, in effect: "Knuckle under, or we'll take you over!" The British hospitals, he said, had been taken over by the government because they opposed socialization, and then he added (this is an exact quotation): "I realize it probably is wholly unnecessary for me, at this point, to belabor the obvious moral." That, no one needs to remind us, is a defy! Congress hasn't even acted on this proposal; no hearings even have been held—yet the bureaucrats in Washington already are wielding the big stick of governmental authority and threatening to crack down on those who don't knuckle under.

—From "The Battle for Survival," by CLEM WHITAKER, in *Illinois Med. J.*, September, 1949.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Ratio of Physicians

THE American Academy of Occupational Medicine, in setting forth its Professional Qualifications and Standards of Professional Performance, stated: "It recognizes that the health hazards and the measures necessary for the prevention of occupational injuries and diseases differ in various industries." With due allowance for the variables in a specific plant, the Academy feels that "the number of physicians can be arrived at generally by consideration of the following weekly requirements: (1) Time required to conduct medical examinations on a schedule which ensures early detection of any illness due to health hazards; (2) The time required for therapeutic procedures; (3) The time required to maintain complete familiarity with plant operations through regularly scheduled visits of inspection; (4) The time required for sanitary inspections and for planning and conducting health education programs; (5) The time required to maintain and study records, make reports and carry out other necessary duties, such as, for example, advising other departments and management on matters relating to health and related subjects, taking necessary action in cases of industrial compensation, etc.

—From "Medical Department Personnel," in Vol. 3, No. 6, *Industrial Health Bulletin*, New Jersey Department of Health, Division of Industrial Hygiene.

Union Viewpoint

UNDERLYING this seven-point activity program for the joint labor-management health and safety committee is the understanding that the

committee should cooperate with the plant medical department which is responsible for the preservation and maintenance of the health of the workers, and with plant safety engineers. If such medical facilities do not exist, it is incumbent upon the committee to collect data to bring to management and point out the need for a medical program. The Division of Industrial Hygiene of the U. S. Public Health Service offers consultant service to both labor and management on the establishment of such programs, and it may be called upon for assistance. The plant medical department, as we envisage it, follows the lines recommended by the U. S. Public Health Service, physicians' and surgeons' groups, and followed by most industrial plants. The plants' dispensary should be manned by full-time or part-time physicians and nurses, depending upon the size of the organization. This is a minimum staff, which may be augmented in larger companies with other assistants such as dentists, technicians, and clerks. The medical service provides continued treatment for occupational illness and general preventive care for all conditions. It also renders emergency medical care to all employees who are injured or become ill on the job regardless of the cause. Through pre-placement physical examinations of all new employees, the medical service guides employees to jobs for which they are physically qualified and which would not impair their health. Through periodic examinations, employees are tested at regular intervals to see if anything has gone wrong in the meantime or if there are any signs of impending disorders. Diseases nipped in the early stages are the most easy and least expensive to cure. More frequent physical examinations, including laboratory tests, are made of workers who are exposed to poisonous materials on the jobs. Examinations of workers returning to work after an absence due to illness or injury ensure that they are capable of working safely and efficiently. The plant medical department is also in a strategic position to take part in health education programs for employees and their families and can provide a valuable counselling service through its knowledge of available community health and welfare resources. These are the basic fundamentals of an industrial medical department. Some plants provide complete medical care for their employees. In the future more union groups may think in terms of providing complete medical care to supplement the basic services that may be provided by industry. At this point in the development of industrial health services, however, the need for a plant medical department is conceded by progressive management. The literature, too, is rich in references to the value of plant medical programs. Again the chief proponents are found in the ranks of management itself. Various studies sponsored by management groups have shown that the cost of industrial health services is *not* exorbitant. One of the latest studies was con-

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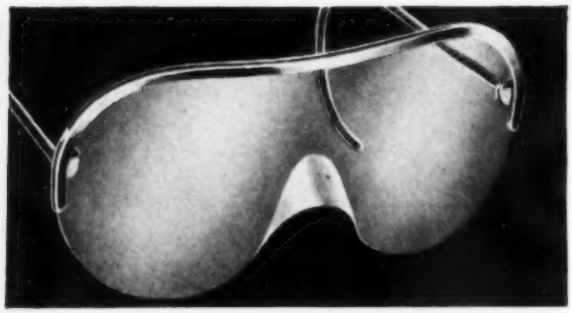

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ducted by Dr. C. O. Sappington and was published by the Industrial Hygiene Foundation in 1948 under the title "Industrial Health Department Functions and Relationships." The Chamber of Commerce of the United States, too, has gone on record for industrial health services, pointing out that "to the level-headed manager it must be obvious that the health cost item is emphatically a 'but' as compared with the loss of time, morale and efficiency, and larger disruption of production lines which follow unorganized health conditions in plant, office, or store."

—From "The Safety and Health Program of the United Steel Workers of America," by FRANK BURKE, Chairman, Health and Safety Committee, U.S. Steelworkers of America, in *What's New in Industrial Hygiene*, April-June, 1949.

DR. PILGRIM

AT THE DESK, with reports, and laboratory data, and long distance phones on medicolegal problems; and in the meantime an enjoyable visit from ATTORNEY and MRS. GRAVES, of Louisville .... AND to the regular monthly meeting of the Chicago Section of the AMERICAN INDUSTRIAL HYGIENE ASSOCIATION to hear DR. A. D. SINGH on various aspects of atmospheric pollution about which there was much discussion, and sitting next to DR. CHARLES WILLIAMS, of Boston, and later greeting DR. LOUIS SPOLYAR, of Indianapolis, visitors at the meeting ... AND looking over Dana's translation of Tanquerel who wrote a book in 1838 with respect to many phases of lead poisoning, there being a number of important principles established at that time which are not even in general use at present, albeit they should be ....AND clearing up as many items as possible before leaving for the Ramazzini rendezvous, going first to Detroit where, for a short visit with brother BYRON and sister OLGA, to the Pine Hill Country Club for dinner and then home for music and Oklahoma; and then to meet DR. HARLEY KRIEGER who drove on the

lake shore route to Port Huron, Sarnia and other towns, PILGRIM acting as navigator, and finally making Owen Sound by dinner time and there meeting the MCCORDS and the JOHNSTONES; and because of so many in the local hotels, looking for quarters at tourist houses; and next day arriving at Muskoka Beach Inn at noon and finding quarters and getting oriented; and thence to the conference cottage Wakeena for precibial libations, and at dinner sitting with HARLEY KRIEGER, LLOYD HAMLIN and BILL MCCONNELL; and after dinner some music and then the most interesting oration by RED JOHNSTONE, who has, it seems, set a new pattern in Ramazzini Orations; and next day to Wakeena again, this time to hear EUGENE SPARROW, Chairman of the Workmen's Compensation Board of the Province of Ontario, on compensation work, and later by automobile to his summer home for a cocktail party, the road being dry and full of "scenic-railway" ups and downs and called by CHRIS LEGGO "the General Motors proving ground"; and then back to Muskoka Beach Inn and to dinner and afterward with the mathematical problems of the pasteboards; and next day most of the Ramazzinians departing; and then ourselves leaving Canada with HARLEY KRIEGER again driving, with RED and ORPHA JOHNSTONE, by way of Toronto and enroute seeing the tobacco farms and many of the drying barns; and, going through Toronto, seeing the ill-fated *Noronic* at the dock; and arriving at Detroit with the JOHNSTONES and establishing quarters and later at dinner, with many a reminiscence .... AND back at the desk, for orientation and to bring matters up to date; and again spending the week-end resting and reading various mystery problems and viewing the yacht races on the lake ... AND concerned with the finishing of a number of reports and assembling biographical material for various purposes, filling in with routine examinations .... AND observing the natal day in a quiet, with a few close friends in for piano music and refreshments .... AND meeting with DRS. PETERSON, COOLEY and S. C. WERCH, recently interested in statistical data with respect to the activities of the Railroad Retirement Board, with many possibilities discussed as to how important questions could be answered by such data .... AND then to routine orchestra rehearsal and the usual preparation of various selections for the coming winter concerts .... AND sojourning to St. Louis to attend the 35th Annual Meeting of the International Association of Industrial Accident Boards and Commissions, and enroute working on various problems in workmen's compensation; and later at the meeting seeing many old and new friends, including HENRY SAYER, DR. D. J. GALBRAITH, MRS. EMMA TOUSSANT, MARY DONLON, and many others; and later talking to DR. WILLIS WEEDEN and DR. CARL OLSON; and meeting CLARK BRIDGES and his assistants at his exhibit on rehabilitation, and later with him and others for refreshments; and in the sessions listening to report of the Medical Committee by DR. D. J. GALBRAITH, and afterward discussing this report, there being many questions of great interest; and in other sessions hearing discussions with reference to trauma and arthritis, trauma and malignancy, medical hazards of atomic energy, and rehabilitation problems, and later meeting with the new Executive Committee in re liaison arrangements .... AND again to the desk and interested, as natural, in the World Series games, these being interspersed with routine reports, investigations of new medicolegal problems, and similar activities .... AND now preparing for a short journey into Ohio, on a brief medicolegal investigation, of which more later.

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References

1. American Committee for the Control of Rheumatism, Pemberton, R.: Rev. Gastroenterol., 9:91, 1942.
2. Spackman, E. W. et al: Am. J. M. Sci., 202:68, 1941.

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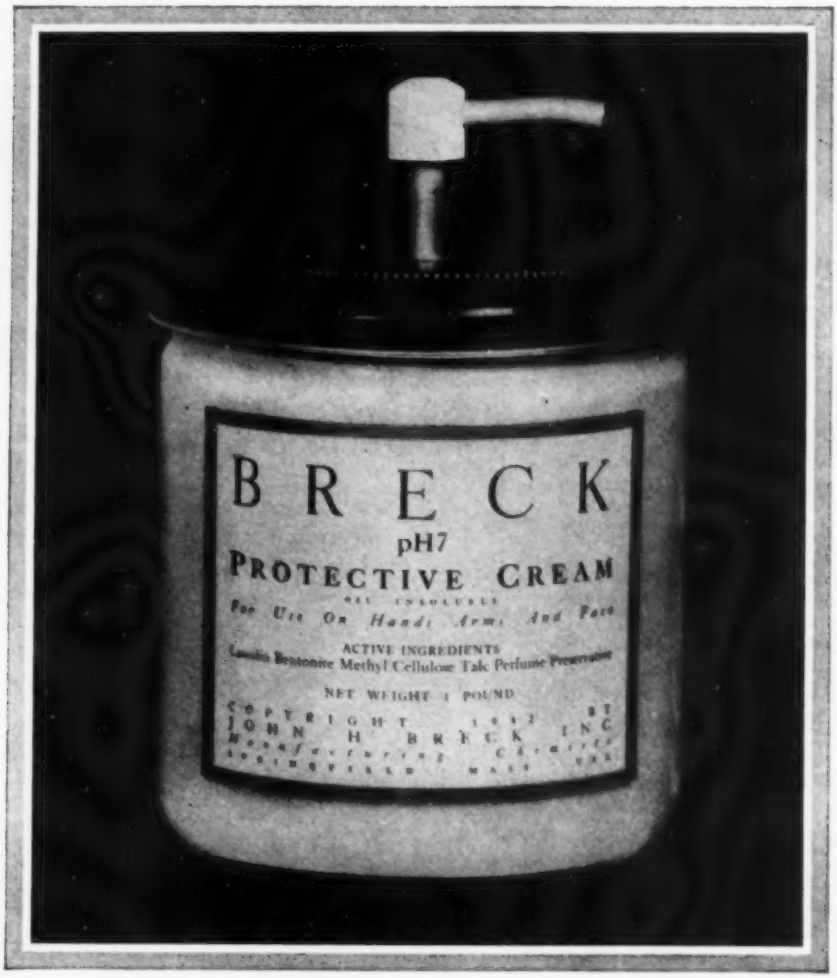

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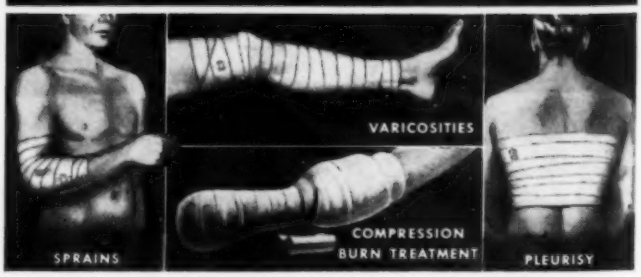

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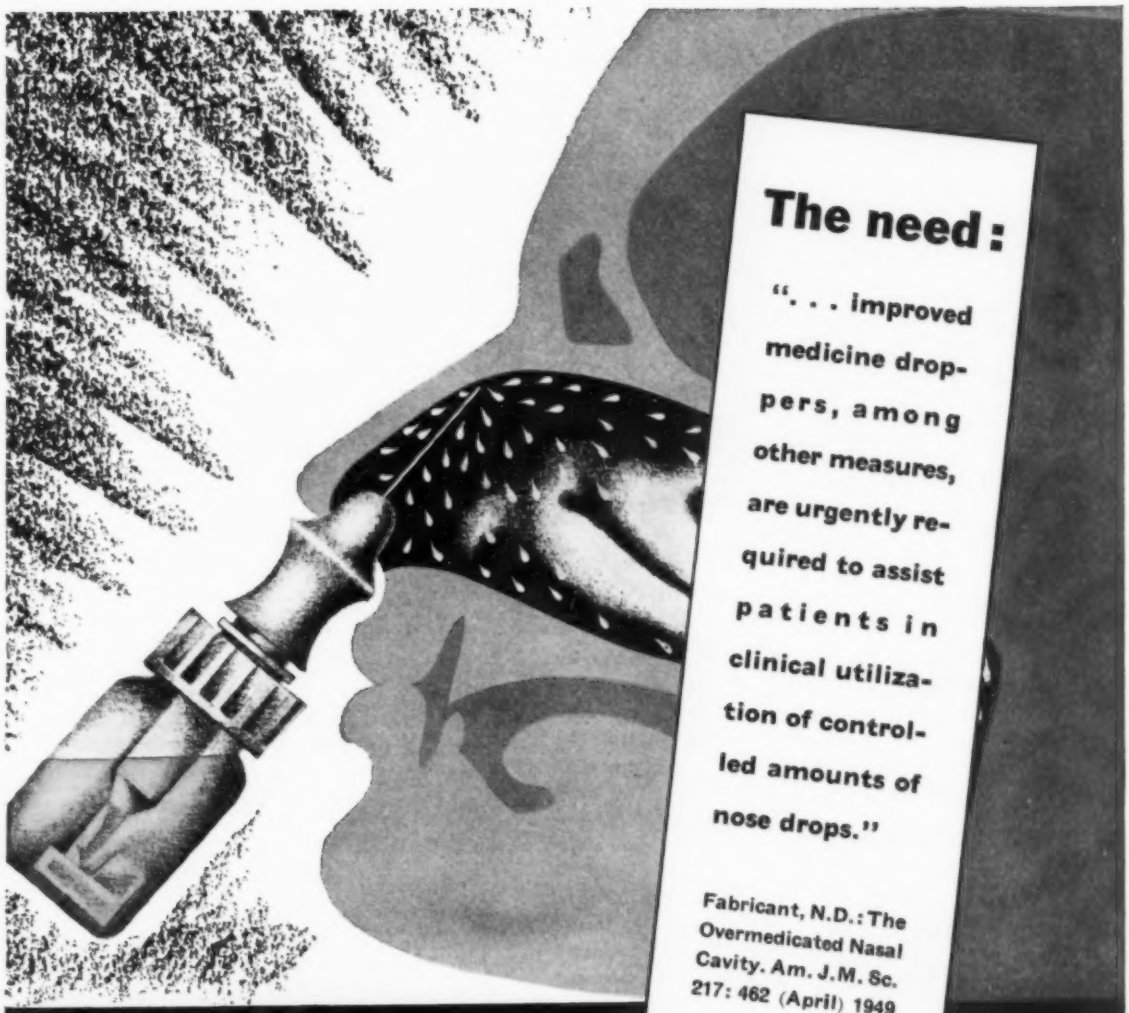

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". . . improved medicine droppers, among other measures, are urgently required to assist patients in clinical utilization of controlled amounts of nose drops."

Fabricant, N.D.: The Overmedicated Nasal Cavity. Am. J.M. Sc. 217: 462 (April) 1949

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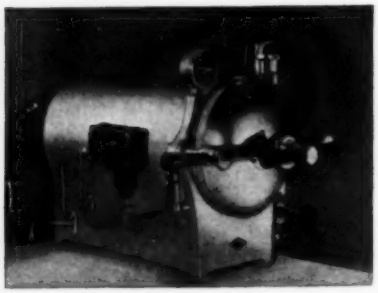

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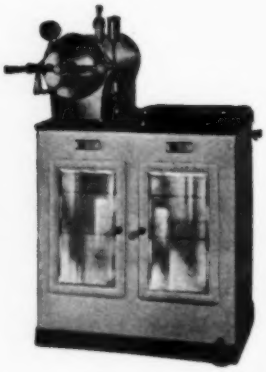

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STATEMENT of the ownership, management, circulation, etc., required by the Act of Congress of August 24, 1912, as amended by the Acts of March 3, 1933, and July 2, 1946, of Industrial Medicine, published monthly at Chicago, Ill., for October 1, 1949. State of Illinois, County of Cook.—ss: Before me, a notary public in and for the State and county aforesaid, personally appeared A. D. Cloud, who, having been duly sworn according to law, deposes and says that he is the Publisher of Industrial Medicine and Surgery and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily, weekly, semiweekly or triweekly newspaper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the act of August 4, 1912, as amended by the acts of March 3, 1933, and July 2, 1946 (section 537, Postal Laws and Regulations), to wit: (1) That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, A. D. Cloud, 1511 Hinman Ave., Evanston, Illinois; Editor, C. O. Sappington, M.D., Dr.P.H., 330 South Wells St., Chicago, Illinois; Managing editor, None; Business manager, Stephen G. Halos, 605 N. Michigan Ave., Chicago, Illinois. (2) That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) Industrial Medicine Publishing Company, 605 N. Michigan Ave., Chicago 11, Illinois; Stephen G. Halos, 605 N. Michigan Ave., Chicago, Illinois; Harold A. Hooper, 55 E. Washington St., Chicago, Illinois; A. D. Cloud, 1511 Hinman Ave., Evanston, Illinois. (3) That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None. (4) That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him. (5) That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is—(This information is required from daily, weekly, semiweekly, and triweekly newspapers only.) A. D. Cloud, Publisher. Sworn to and subscribed before me this 12th day of October, 1949. (Seal) Lucille H. Gross. (My commission expires February 14, 1951.)

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1. Urbach, E. and Gottlieb, P. M., Allergy, Grune and Stratton, 1946.

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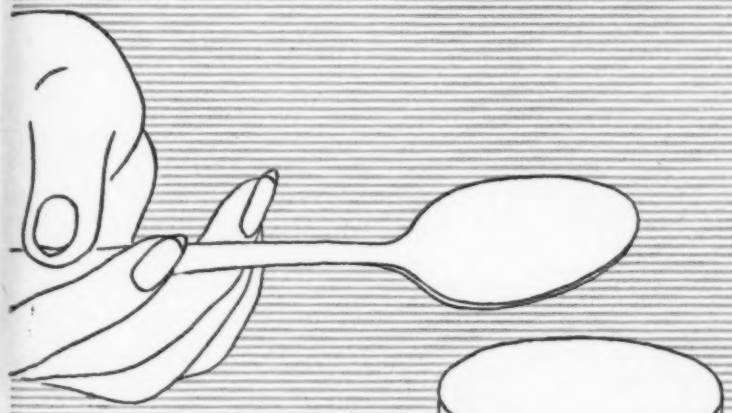

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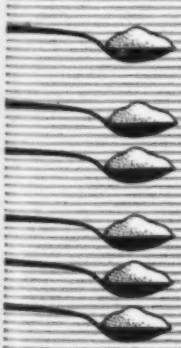

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1. Friedlaender & Friedlaender: Amer. Pract. 2:643 (June) 1948.

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